

**GOVERNING DEFORESTATION: A GOVERNMENTALITY ANALYSIS OF
TROPICAL FORESTS IN CLIMATE NEGOTIATIONS**

By
MATTIAS HJORT

A thesis submitted to the University of Birmingham
for the degree of DOCTOR OF PHILOSOPHY

International Development Department
School of Government and Society
College of Social Sciences
University of Birmingham
September 2015

UNIVERSITY OF
BIRMINGHAM

University of Birmingham Research Archive

e-theses repository

This unpublished thesis/dissertation is copyright of the author and/or third parties. The intellectual property rights of the author or third parties in respect of this work are as defined by The Copyright Designs and Patents Act 1988 or as modified by any successor legislation.

Any use made of information contained in this thesis/dissertation must be in accordance with that legislation and must be properly acknowledged. Further distribution or reproduction in any format is prohibited without the permission of the copyright holder.

Abstract

This thesis conducts an empirical analysis of how ‘reducing emissions from deforestation and forest degradation’ (REDD+) is rendered governable through negotiations under the United Nations Framework Convention on Climate Change. REDD+ is a proposed emissions trading scheme where deforestation in ‘developing’ countries is reduced through monetary incentives, and where this counts as ‘reduced greenhouse gas emissions’ that can be used by ‘developed’ countries to comply with their commitments to reduce emissions. A Foucauldian governmentality perspective is applied to conceptualise the negotiations as a process of contestation where the outcomes validate and target certain governance arrangements, actors and ideas, while subjugating others, with concrete effects for how forest users, forests and the climate will be governed. This process is analysed by drawing on discourse analysis and actor-network theory to consider both social and material contestation throughout the negotiations, which serves to elucidate the contested foundation REDD+ is built on. The process of validation and subjugation analysed throughout the negotiations is argued to manifest a governing strategy that subjugates deviations from how REDD+ was originally conceived, and that polices its borders so as not to jeopardise growth-oriented patterns of production and consumption outside of the scheme.

Acknowledgements

My first acknowledgement must go to my supervisors, Fiona Nunan and Emma Foster. Their support helped me sharpen all aspects of my work and was nothing less than instrumental for the current shape of this thesis. They were also a source of relentless encouragement and support, always taking the time to offer advice and reassurance when needed. Finally, they wrote the most magical supporting statement to my scholarship application, which allowed me to dedicate myself fully to the thesis.

I wish to express my gratitude to Andreas Frank Thorslund, Samuel Warner, Max Lampière, John Evemy and Lance Spencer Davies for their excellent proof reading skills.

I must also acknowledge my mother, Eva Hjort, and father, Hans Hjort, for always being very supportive and encouraging.

Finally, to Eva Fringi: thanks for everything!

Table of Contents

INTRODUCTION	1
1.1 Argument and contribution.....	15
1.2 Data sources.....	17
1.3 Thesis outline.....	18
THEORISING HOW REDD+ IS RENDERED GOVERNABLE THROUGH THE UNFCCC NEGOTIATIONS.....	22
2.1 Theories of climate negotiations.....	23
2.2 Governmentality	32
2.2.1 Complementing a governmentality framework with discourse analysis.....	41
2.2.2 Complementing a governmentality framework with actor-network theory	45
2.2.3 Integrating discourse analysis and actor-network theory	50
2.3 Conclusion: Integrating discourse analysis and ANT to operationalise a governmentality framework	54
RESEARCH DESIGN AND METHODS.....	57
3.1 Research design	58
3.2 REDD+ negotiating bodies and rules of procedure.....	62
3.3 Research methods	67
3.3.1 UNFCCC documents.....	68
3.3.2 Document sampling range	70
3.3.3 Interviews with Party- and non-state actors	73
3.3.4 Observations from two UNFCCC negotiation events	78
3.4 Data Analysis.....	79
3.4.1 Discourse analysis	80
3.4.2 Actor-network theory and impressionist object tracing	85
3.5 Research limits and reflexivity	88
3.6 Conclusion	92
FROM CLIMATE GOVERNANCE TO REDD+	94
4.1 Governing the carbon cycle	95
4.2 From climate governance to REDD+	102
4.3 Substantiating the background to REDD+	109
4.3.1 Transforming forest cover to carbon quantities.....	112

4.3.2 REDD+ design elements	117
4.3.3 REDD+ outside of the UNFCCC	120
4.4 Conclusion	123
THE RATIONALITY OF REDD+	125
5.1 The rationality of REDD+	126
5.2 Politicisation and counter-conduct	135
5.2.1 Counter-conduct	137
5.2.2 Modifying the rationality of REDD+?	140
5.3 Co-benefits and safeguards.....	143
5.3.1 Negotiating safeguards	148
5.4 Non-carbon benefits: challenging the carbon focus of the rationality.....	153
5.5 Conclusion	157
SELECTIVELY ADDRESSING DRIVERS OF DEFORESTATION IN REDD+	160
6.1 What drives deforestation in REDD+?	161
6.2 Governing forest users through opportunity cost compensation	167
6.2.1 From opportunity cost compensation to the governance of subjects' conduct.....	171
6.3 Resisting and reaffirming the governance of local forest users.....	178
6.4 Conclusion	187
FAITH IN TECHNOLOGIES.....	189
7.1 Faith in technologies.....	190
7.1.1 The Bali Action Plan and network constellations	202
7.2 Three reference level methods.....	204
7.3 Conclusion	217
A WANING MASTERY OF CARBON STOCKS AND FLOWS	219
8.1 The difficulties of measuring forest degradation.....	220
8.2 Carbon pools and peatlands.....	229
8.3 IPCC tiers: quantifying carbon without measuring it?	238
8.4 Conclusion	245
CONCLUSION: A GOVERNING STRATEGY EMERGING.....	248
9.1 The regime of practice and the emergence of a governing strategy	249
9.2 Contribution.....	255
9.2 Limitations and future research	259

9.3 Postscript, February 2016	262
APPENDICES	266
Appendix 1: Participant Information Sheet	266
Appendix 2: Participant Consent Form	268
REFERENCES	269

List of figures

Figure 1	Reference level relevant for REDD+ projects	104
Figure 2	REDD+ design elements	118

List of tables

Table 1	Analysed documents	72
Table 2	List of interviews	78
Table 3	Sensors of multiple resolutions for deforestation monitoring	222

List of abbreviations

ADP	Ad Hoc Working Group on the Durban Platform for Enhanced Action
ANT	Actor-network theory
AWG-LCA	Ad Hoc Working Group on Long-term Cooperative Action under the Convention
A/R	Afforestation and reforestation
BAP	Bali Action Plan
BASIC	Brazil, South Africa, India, China
BINGO	Big international non-governmental organisation
CAN	Climate Action Network International
CBDR	Common but differentiated responsibility
CCBA	Climate, Community & Biodiversity Alliance
CDM	Clean Development Mechanism
CIFOR	Center for International Forestry Research
COICA	Coordinator of Indigenous Organizations of the Amazon River Basin
COMIFAC	Central African Forest Commission
COP	Conference of the Parties
DAF	Development Adjustment Factor
DEA	Department of Environmental Affairs (South Africa)
ECA	Ecosystem Climate Alliance
ED	Environmental Defence
FAN Bolivia	Fundación Amigos de la Naturaleza Bolivia
FAO	Food and Agriculture Organization of the United Nations
FCPF	Forest Carbon Partnership Facility
FIP	Forest Investment Program
FPIC	Free, prior and informed consent
FPP	Forest Peoples Programme
GFC	Global Forest Coalition
GHG	Greenhouse gas
GOFC-GOLD	Global Observation for Forest Cover and Land Dynamics
GPG-LULUCF	Good Practice Guidance for Land Use, Land-Use Change and Forestry
GWP	Global warming potential
ICRAF	International Centre for Research in Agroforestry
IES	Institute for Environmental Security
IGO	Intergovernmental organisation
IIPFCC	International Indigenous Peoples Forum on Climate Change
IPAM	Instituto de Pesquisa Ambiental da Amazônia
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature
IWGIA	International Work Group for Indigenous Affairs
KP	Kyoto Protocol
LDC	Least developed country
MRV	Measurement, reporting and verification
NASA	National Aeronautics and Space Administration
NCB	Non-carbon benefit
NFMS	National forest monitoring system
NGO	Non-governmental organisation

PES	Payment for ecosystem services
RED	Reducing emission from deforestation
REDD	Reducing emissions from deforestation and forest degradation
REDD+	Reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries
REL	Reference emissions level
RL	Reference level
SBI	Subsidiary Body for Implementation
SBSTA	Subsidiary Body for Scientific and Technological Advice
SIS	Safeguards information system
tCO ₂ e	Tonnes of carbon dioxide equivalent
TNC	The Nature Conservancy
UN	United Nations
UNDP	United Nations Development Programme
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNEP	United Nations Environment Programme
UNEP-DTU	United Nations Environment Programme - Technical University of Denmark
UNFCCC	United Nations Framework Convention on Climate Change
UN-REDD	United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries
VCS	Verified Carbon Standard
WCED	World Commission on Environment and Development
WHRC	Woods Hole Research Center
WWF	World Wildlife Fund

Chapter 1

INTRODUCTION

In 2013 I attended two conferences to conduct interviews for this thesis. The conferences were negotiation sessions under the United Nations Framework Convention on Climate Change (UNFCCC) with the aim to develop a new global agreement to reduce greenhouse gas emissions. When I asked one of the negotiators for his view on a particular decision related to tropical forests, he replied that ‘it is a non-decision that wants to look like a decision, so I think it is a demonstration of all the emptiness you can make as a negotiator’ (Party Interview, 2013e). He explained that the decision was a statement saying ‘ok, we have considered it and we don’t want to do anything new on it’. The opinion of the negotiator concerned a minor decision under a larger Convention, because tropical forests are just one of many topics considered under the UNFCCC since its inception in 1992. An equally pessimistic opinion could, however, be applied to all the work that has been done under the UNFCCC, because it has not been able to alter the global trend of increasing emissions of greenhouse gases (Klein, 2014).

The only significant event that temporarily stalled this trend was the 2008 financial crisis, but emissions have since picked up pace again (Klein, 2014). This correlation of emissions with economic activity does not provide a positive outlook for the future, because economic growth is an ambition few countries would compromise with, not least because growth is enshrined in the Convention text of the UNFCCC, which affirms the ‘legitimate priority needs of developing countries for the achievement of sustained economic growth’ to deal with pressing issues such as poverty reduction (United Nations, 1992: 3). However, the Convention also stipulates that countries should promote sustainable development, a concept that seeks to break the suggested correlation by postulating that both social and economic development can be undertaken in a

way that is ecologically sustainable (WCED 1987). The concept suggests that all countries can develop on a sustainable trajectory through the application of innovative technological solutions and the institution of progressive political initiatives, but this has not been demonstrated on a global level, because emissions are as argued still increasing.

Initiatives are, however, being developed under the UNFCCC with sustainable development as a foundation, where the explicit aim is to reduce emissions while promoting social and economic development at the same time. One such initiative is REDD+, or reducing emissions from deforestation and forest degradation, which is being negotiated for a probable inclusion in a climate agreement that is intended to be adopted in late 2015 and to take effect by 2020. It was first discussed in 2005 based on a proposal pointing out that forests in ‘developing’ countries keep diminishing and that this trend will continue in the future with increased greenhouse gas emissions as a result (UNFCCC, 2005). However, the proposal continued, if forest users are given monetary incentives to conserve forests, the trend can be reversed and emissions reduced. Emissions would therefore be considered ‘avoided’ and could be sold as ‘carbon credits’ to ‘developed’ countries. Such countries were in turn assumed to be willing to commit to rigorous domestic emission reductions and use the credits to comply with a part of their commitments, which means that the credits would be used to reduce less fossil-based emissions domestically.

REDD+ is thus a carbon trading scheme where terrestrial emissions in ‘developing’ countries are avoided through monetary input from ‘developed’ countries, to later be used as a right to reduce less fossil-based emissions domestically. It was proposed as a market-based mechanism where the demand for carbon credits would be matched by suppliers providing cost-effective solutions, because it was considered cheaper to reduce emissions from deforestation than from energy intensive sectors in ‘developed’ countries (Stern, 2006). REDD+ was also

argued to provide a range of additional benefits such as biodiversity conservation and sustainable incomes for hundreds of millions of forest users (TVE/UN-REDD 2009). The scheme thus resonates with the sustainable development concept and aims to achieve both ecological and economic objectives. It aspires to reduce emissions, but also assist both ‘developed’ and ‘developing’ countries economically, the former by lowering the costs of emission cuts since they can be cost-effectively outsourced, and the latter by contributing to sustainable development through the payments received.

One way to conceptualise REDD+ is to approach it as a ‘regime of practice’, which is a broad concept encompassing the ensemble of ideas and practices directed towards addressing particular issues or fulfilling certain needs (e.g. Stephan et al., 2014). The issue area REDD+ addresses is as explained the deforestation/climate change nexus. The regime includes the emerging multi-layered governance initiatives tasked to address this issue in practice, e.g. REDD+ projects with their elaborate monitoring systems tracking emission reductions that have been piloted since 2007, inter- and non-governmental organisations assisting in REDD+ preparations, and a potential carbon market infrastructure. The regime also includes the ideas behind this practice, and a few of those have been considered above, including the legitimising ideas that carbon markets can result in cost-effective emission reductions and that REDD+ will promote sustainable development. This thesis analyses how the authoritative guidelines for the regime of practice developed through the UNFCCC negotiations. The negotiations are contentious processes where the legitimising ideas of REDD+ are challenged and reshaped, and where the detailed guidelines for how REDD+ should be implemented in practice are contested and substantiated. These processes are analysed with the intention to understand how the guidelines developed over time, and what the consequences are for how REDD+ governance will be undertaken.

This analytical focus, which is substantiated throughout this introductory chapter, is legitimised by the fact that most of the literature on REDD+ is policy prescriptive and ‘fairly slanted towards technical issues and the prospective design of the scheme or normative opposition to it’ (Hufty and Haakenstad, 2011: 1). The bulk of the existing literature thus either considers how REDD+ should be constructed to effectively reduce emissions, or argues that it should not be constructed at all. Of the critical attention REDD+ has received, it has, for example, been questioned whether carbon trading will lead to a reduction in emissions, since less emissions would be reduced in ‘developed’ countries, and whether forest users will actually benefit from REDD+, since other more powerful actors may reap the benefits of the scheme (Phelps et al., 2010, Cabello et al., 2011). There is also literature that has considered the negotiations from a variety of perspectives. For example, Pistorius (2012) provided a descriptive historical account of the negotiation process; Allan and Dauvergne (2013) studied the role of political coalitions during the negotiations, and Pistorius et al. (2011) focused on the challenges and opportunities of integrating special considerations for biodiversity in the negotiation outcomes.

However, the literature is ‘extremely thin with regards to reflections on what governing through REDD+ entails’ (Stephan, 2013: 11). This is not surprising considering that the climate agreement where REDD+ may be included will be operationalised by 2020 at the earliest. However, literature is emerging in this reflective and sometimes critical tradition (e.g. Boyd, 2010, Thompson et al., 2011, Gupta et al., 2012, Stephan, 2013). Thompson et al. (2011: 100), for example, discussed how REDD+ constitutes ‘a particular framing of the problem of climate change and its solutions that validates and legitimises specific tools, actors and solutions while marginalising others’. They thus take a step back from considering the effectiveness of REDD+ and instead reflect on how it is based on a particular problem formulation that targets certain

tools, actors and solutions while avoiding others. This thesis aims to make a contribution to the same tradition as that of Thompson and others. It analyses the contested process of developing REDD+ through the UNFCCC negotiations, with a focus on how the outcomes produce guidelines that legitimise governing based on certain ideas and methods, and directed towards certain actors, while marginalising other ideas, actors and approaches.

The thesis thus analyses how the authoritative guidelines informing the regime of practice of REDD+ developed through processes of validation and subjugation. The analysis begins with the introduction of REDD+ in 2005 and continues up to mid-2015 when much of the guidelines had been adopted. This is suitably carried out by undertaking a *governmentality analysis*, a perspective originating in Michel Foucault (1991a) and developed by post-Foucauldian scholars, including Dean (1999). Following Dean, such an analysis splits up a regime of practice in four different dimensions to cover both ideas and practices, one of them being *rationalities*. Governmentality theory¹ assumes that governance initiatives are based on historically contingent structures of ideas that legitimise and coordinate governance of particular problems; a rationality (Dean, 1999). The description of REDD+ above can from such a point of view be understood to manifest a rationality that resonates with the concept of sustainable development. The problems to address are deforestation and climate change, and the particular solutions to these problems, payments and carbon trading, are legitimised by the assumption that emissions will be reduced cost-effectively while also contributing to sustainable development. In other words, the ideas and aspirations behind REDD+ governance resonate with the ideas of the sustainable development concept.

Two other dimensions are *fields of visibility* and *forms of subjectivity*. The first corresponds to ideas regarding who should be the targets of REDD+ governance and the second

¹ Governmentality theory is given a simplified rendition in this introductory chapter and is more fully substantiated in chapter two.

to how those targets are conceptualised. These two dimensions are based on the assumption that rationalities embody specific representations or ideas regarding how governance can be undertaken and on whom. In the initial REDD+ proposal there was the idea that forest users are the targets of REDD+ governance, and they were conceptualised as willing to conserve forests if sufficient economic incentives are made available. Such ideas are constitutive elements of governance initiatives; without them governance would lack coordination. The final dimension is *technologies* and it corresponds to the practical governance infrastructure of REDD+, including, for example, the monitoring systems that are implemented to ascertain how much deforestation has been avoided. These four dimensions constitute a regime of practice (Dean, 1999), the ensemble of ideas and practices addressing the issues of deforestation and climate change through REDD+. This thesis analyses how the dimensions were contested and developed throughout the negotiations. Such a focus entails that technologies, the governance infrastructure, is not analysed in practice, but rather how the guidelines informing this infrastructure were constructed throughout the negotiations.

The negotiations include both delegates from nation-states, 'Parties', and formally powerless non-state actors that nevertheless submit their views on how REDD+ should be developed and seek to influence the negotiations. Many of these actors have been very supportive of REDD+ but negotiated intensively on certain aspects of the scheme. Others have been more critical and sought to instigate more substantial modifications, such as the prohibition of carbon markets. Such contentious processes have resulted in negotiation outcomes specifying how to practically operationalise REDD+. The outcomes approve of certain governance arrangements while other proposals are subjugated, and they suggest that some forest users are more suitable to govern than others. Certain ideas for how these actors should be governed are given preference over others, and certain parts of forests are selected

for monitoring while others are made optional. The outcomes thus construct a partial picture, a specific and selective regime of practice with concrete effects for how forest users, forests and the climate will be governed. This thesis analyses the negotiation process to elucidate how this selective regime is developed and how it depends on the subjugation of alternative ideas and governance approaches. A suitable way to phrase this research enquiry is to state that the main ambition of this thesis is to analyse how, through the negotiations, REDD+ is rendered governable through processes of validation and subjugation. The analysis is guided by the following research question:

- *How is REDD+ rendered governable through the UNFCCC negotiations?*

The following paragraphs elaborate on three more detailed analytical focal points directly corresponding to the four dimensions noted above (one focal point covers two dimensions). Further motivation for the research project is provided throughout the elaboration of the focal points.

It was stated that a governmentality perspective assumes that governance initiatives are based on rationalities that legitimise and coordinate governance. The legitimising ideas were briefly suggested to resonate with sustainable development and the coordinating ideas include market arrangements to facilitate cost-effective emission reductions. The first focal point analyses the rationality in more detail to flesh out its constitution. This includes an analysis of the problem that REDD+ seeks to address, what the purported outcomes are that legitimise governance, and by what arrangements and practices this is to be achieved. However, this focal point also addresses how the rationality has been challenged throughout the negotiations. It considers both contestation of governance practices, such as the use of carbon markets, and

scepticism regarding the intended outcomes of REDD+, including whether forest users will benefit from REDD+. The impact of these challenges is traced in negotiation outcomes. Doing so contributes to the analyses that have approached the negotiations from similar perspectives, notably discourse analysis (e.g. Hiraldo and Tanner, 2011, den Besten et al., 2013, Nielsen, 2013, Stephan, 2013, Stephan et al., 2014), which indicate that the rationality is generally supported, but not without reservations or contestation.

The motivation for analysing contestation within the negotiations is to elucidate processes of validation and subjugation that otherwise risk being undisclosed. The UNFCCC only passes decisions when consensus can be reached, which means that points of contestation are addressed and adopted REDD+ guidelines are formally supported by all Parties. However, this is based on a process where only some suggestions are agreed by consensus while others are excluded from the negotiations. It is therefore relevant to analyse what forms of contestation have been validated and allowed to influence the development of REDD+, as well as what suggestions have been subjugated. This continues the work done by Thompson et al. (2011) that considered how REDD+ legitimises particular ideas, actors and governance arrangements while marginalising others, and it also illustrates the contested, rather than consensual, foundation the rationality is based on. This focus is guided by the following research question:

- *What is the rationality of REDD+ and how has it been contested throughout the negotiations?*

The second focal point corresponds to the two dimensions of a regime of practice detailed after rationalities above. It was argued that rationalities embody ideas regarding who should be the targets of governance as well as conceptualisations of those targets. REDD+ thus embodies

particular ideas of such governance targets, and they were above specified to be forest users. Forest users are assumed to drive deforestation and can therefore be incentivised with payments to conserve forests. However, 'forest users' is an undifferentiated category. Research on what drives deforestation suggests that the causes are global; while those living in forests may drive forest loss, so may also urban residents in 'developing' countries but also, and more broadly, the consumption of beef, soy, biofuels and other forest and agricultural commodities in emerging economies and 'developed' countries (Kissinger et al., 2012). It is based on this insight assumed that there may be contestation regarding what type of drivers of deforestation to address in REDD+.

Stephan (2013) research on REDD+ suggests that smallholders and subsistence farmers may be targeted in REDD+ as it is believed that they are cheaper to address than other drivers. This could lead to a situation where only certain drivers are targeted while the industrial production of forest and agricultural commodities, and the demand for such commodities, remain, which may have implications for the effectiveness of a future REDD+ regime. This analytical focal point therefore firstly aims to analyse what factors are articulated as drivers in the negotiations, and which of those drivers are subjugated as well as adopted in negotiation outcomes. This furthers the work done by Stephan and Thompson et al. (2011), and interrogates how REDD+ targets certain actors while others are marginalised. Moreover, analytical conclusions are intended to contribute to literature assessing what drives deforestation in different contexts and locations (e.g. Kissinger et al., 2012, Gallon and Busch, 2014). That literature, in combination with the intended conclusions of this study, provides a suitable basis for discussing the effectiveness of REDD+.

The second part of this focal point addresses how the drivers are conceptualised. Governmentality theory assumes that rationalities embody ideas of how subjects are constituted

that make certain governance procedures more suitable than others. Stephan (2013) has undertaken a governmentality analysis of REDD+ and he argues that the logic of incentivising forest users to conserve forests through payments represents them as utility-maximising subjects responsive to monetary incentives. Governance is facilitated through payments, and this is thought to work because subjects are assumed to change their behaviour when subjected to payments. REDD+ therefore embodies an idea that forest users relate to forests based on economic criteria. Stephan's empirical focus meant that he did not closely analyse different representations within the negotiations, but he argues that the above representation is contested and other representations are advanced in which forest users do not primarily relate to forests based on economic criteria, and where environmental stewardship has other roots.

This study continues Stephan's work and analyses whether different representations are advanced through the negotiations. Consideration is given to what type of policy proposals they are advanced alongside, including proposals that seek to challenge the idea that forest users should be awarded payments on the sole merit of how well they reduce carbon emissions. Such proposals need not be advanced because forest users are assumed to be inefficient at conserving forests. Rather, it may be to challenge how payments depend on the construction of rigid carbon monitoring systems and to attune the scheme to the forest conservation traditions and practices of forest users.

This analytical interest is propelled by Foucault (1991a, 2008) and his understanding of subjects' conduct as impressionable by the socio-cultural environment and its incentive structures.² This understanding paves the way for an assumption that peoples' conduct may be affected by how they are represented and acted upon through REDD+ governance over time. However, how the multitude of people here categorised as 'forest users' are affected by REDD+

² This Foucauldian understanding of subjects is substantiated in the next chapter.

governance likely depends on numerous factors, including other incentive structures in their environment, and this thesis does not analyse governance in practice (but see: Agrawal, 2005). Nonetheless, this understanding of subjects makes an analysis of how they are conceptualised as governable highly relevant. The analysis aims to build an understanding of what type of subjectivity REDD+ is based on, and therefore potentially promotes through the implementation of the scheme. A research question to guide this analysis is phrased accordingly:

- *Who are represented as drivers through the negotiations and how will they be governed?*

The final focal point concerns the technologies dimension noted above. This thesis does not analyse the practical governance infrastructure of REDD+, but rather the negotiations establishing the guidelines for a part of this infrastructure. The guidelines in question are those describing how monitoring systems should be instituted to monitor emission reductions, which is the basis of producing tradable carbon credits. Such systems must be very precise, because the unit of measurement is tonnes of avoided carbon emissions and not, for example, hectares of forest. These technical negotiations are rife with contestation where different guidelines have been preferred by negotiators based on further considerations than rational scientific pursuit. To give one example, carbon in forests can be divided according to different ‘pools’ and negotiators considered whether all pools had to be monitored. While including all was argued to lead to the most accurate estimations, it was also acknowledged that it could be difficult and expensive to measure some of them, such as soils, for example.

There are thus tensions within these technical negotiations where Parties struggle with costs and monitoring capabilities in their attempt to agree on rigorous monitoring guidelines. The negotiations are similar to those on drivers of deforestation. Both result in partial outcomes where only some factors are represented as drivers, or only some parts of forests are represented as belonging to the monitoring system of REDD+. However, in this case the negotiations also concern with what level of rigour carbon emissions should be measured in those forest parts. This focal point centres on how this partial representation of forests is constructed through the negotiations and how it should be monitored. It builds on literature considering REDD+ from related perspectives (e.g. Boyd, 2010, Stephan, 2013, Cuckston, 2014). Stephan, for example, has illustrated how REDD+, through its predominant interest in carbon, produces a particular representation of forests that is centred on carbon while marginalising other aspects of forests, such as biodiversity. However, the literature has so far, aside from a section in Cuckston's publication, focused little on the politics within the more technical negotiations where this carbon-centered representation is fragmented, and where simplified monitoring criteria are discussed, and therefore benefits from being substantiated.

This is relevant because Parties construct their monitoring systems and produce carbon credits based on the agreed guidelines. Those credits always embody precise quantities of avoided emissions, because it is not possible to trade carbon credits based on uncertain amounts. Negotiators and those actors implementing REDD+ can still acknowledge potential uncertainties arising from the guidelines and how they are applied in practice. This must, however, be bracketed or silenced before carbon credits can enter into the market system and accounting frameworks of REDD+, because those frameworks are based on exact rather than uncertain figures. This means that potential choices, simplifications, and exclusions made by Parties when they adopt monitoring guidelines and implement monitoring systems based on

those guidelines are likely to be hidden from view when the credits are circulating in carbon markets. They are, to quote MacKenzie (2009: 446), ‘black boxed’. This study thus re-opens a part of this box. It gives readers an impression of how negotiators themselves articulated uncertainties and monitoring difficulties, and how this affected the adopted guidelines.

The conclusions of these technical negotiations specify how monitoring should be undertaken to produce tradable carbon credits, and another way of phrasing this is to say that forest carbon is rendered tradable based on the negotiation outcomes. A research question to guide this analysis is therefore:

- *How is REDD+ carbon rendered tradable through the negotiations?*

The three analytical focal points address different aspects of REDD+, but together they constitute the rationalities and guiding directives for the regime of practice of REDD+. The analytical scope is wide, but the benefit of a wide scope is to include the main constitutive facets of REDD+ governance. Excluding any of the focal points would omit central ideas behind REDD+ governance, or fundamental aspects regarding how governance will be practically undertaken. The wide scope also furthers the research project of Thompson et al. (2011). It expands on their insights and explores how governing depends on the validation of specific tools, actors and solutions while marginalising others through all focal points, including the technical negotiations that have been given less attention in the literature. The analysis is therefore exploratory and it provides one of the first substantial research outputs addressing how REDD+ is rendered governable through processes of validation and subjugation.

While governmentality theory alongside additional arguments for its suitability is further detailed in the next chapter, the insistence of this research project on addressing *how* instead of

why questions must also be motivated, because *how* questions are descriptive in character and thus, perhaps, not as analytically interesting as *why* questions that seek to provide causal explanations (Death, 2014). Choosing to address how REDD+ governs rather than why it governs the way it does has its explanation in the theoretical assumptions of post-structuralism, a tradition rejecting objective knowledge and subjects free from power relations. In this tradition, forms of knowledge, mediated by language and structured in discourses, are assumed to influence the thoughts, aspirations and even identities of subjects (Jørgensen and Phillips, 2002). Governmentality theory is situated within this tradition and focuses on how such knowledge of subjects and objects matter for how they are governed (Löwbrand and Strippel, 2014).

It follows that it becomes very hard to establish the causal *why* of governance, for it becomes less relevant to single out certain actors as responsible for particular actions when they are assumed to be influenced by such forms of knowledge. A focus on *how* questions escapes this search for causality, but it could instead lead to a descriptive and non-normative project. However, the focus, in every analytical focal point, on processes of validation and subjugation functions as a form of unsettling critique. It embraces the Foucauldian type of critique that focuses on ‘showing that things are not as obvious as people believe, making it so that what is taken for granted is no longer taken for granted’ (Foucault in Death, 2014: 86). In other words, the aim is not only to describe how REDD+ is rendered governable, which indeed could lead to an assumption that this type of governance is taken for granted, but also to show how this governance is based on the subjugation of critical alternatives. This has the consequence of unsettling REDD+ governance, of opening up vistas for questioning whether the chosen paths were the most suited, and of illustrating at what expense those paths were chosen.

1.1 Argument and contribution

Foucault used the governmentality concept in different ways; both as an approach to describe a specific form of governance or power, and as a mode of analysis (Foucault, 1991a, 2008, Death, 2014). In this thesis it is used as a mode of analysis, but others ‘have used governmentality almost synonymously with neoliberalism’, equating it with market-based governance and forms of power in advanced liberal societies (Death, 2014: 80, Stripple and Bulkeley, 2014b). The argument I want to make is that even though governmentality is used as an analytical tool and the thesis is broad and exploratory, the analytical conclusions of the empirical chapters suggest a certain coherence, a certain form of governance that emerges through processes of validation and subjugation throughout the negotiations.

This coherence includes many facets, but the argument, in short, is that those suggestions advanced throughout the negotiations that sought to reframe REDD+ by prohibiting carbon trading, making REDD+ conditional on the approval of forest users (which could be a way to prohibit the scheme from penetrating into certain regions) and addressing drivers of deforestation in ‘developed’ countries (instead of solely ‘developing’) were for the most part marginalised. Those suggestions that resonated with the original REDD+ proposal and held that REDD+ would lead to cost-effective emission reductions as well as a range of sustainable development ‘co-benefits’ were on the other hand validated throughout the negotiations. I deduce from this a tentative governing strategy that validates governance according to the original REDD+ proposal and subjugates deviations. It is a strategy that at once perpetuates the rationality and polices its borders so as not to jeopardise economic relations and patterns of production and consumption outside of the scheme. This argument is revisited in greater detail in the concluding chapter of the thesis.

This thesis makes several contributions in addition to the above governing strategy, both empirical and theoretical. One contribution is to complement and expand on Stephan's (2013) governmentality analysis of REDD+ by undertaking the first in-depth analysis of how the authoritative guidelines informing the regime of practice developed throughout the negotiations. The study complements Stephan's analysis because both are attentive to the constitution of the regime of practice. However, it also makes an original contribution when analysing how the guidelines developed over time based on a process where certain ideas, governance arrangements and actors were legitimised or targeted while others were subjugated. This is an empirical contribution providing a unique account of how the regime developed through a point-by-point policy perspective that illustrates how all topics, from the more politicised to the more technical, are highly contested and dependent on the subjugation of critical alternatives. It is from this particular vantage point that the study aims to unsettle REDD+ governance and analyse it as based on the subjugation of deviating ideas.

Another contribution is theoretical and highly relevant for post-structural climate governance literature. Governmentality theory is operationalised by drawing on discourse analysis, but also actor-network theory (ANT), a theoretical tradition elaborated in the next chapter, to consider how physical devices affect how representations are formed. The analysis of how forests are represented draws on ANT to consider how the capabilities of physical monitoring devices influenced negotiators when constructing monitoring guidelines. The construction of those guidelines is therefore not viewed as a purely social process, which is common in discourse theory, but as also affected by monitoring technologies such as, for example, satellites with remote sensing equipment. This theoretical combination has recently been applied or suggested in a range of publications (e.g. the contributions by Blok, Death, Eden and Lovell in Strippel and Bulkeley, 2014a). However, this thesis constructs an elaborate

methodological framework that theoretically integrates the two traditions. In doing so the framework enriches debates on the analytical scope of post-structural research and offers a pathway to incorporate empirical considerations often omitted in such research. While this framework is novel in the context of climate governance it also has certain limitations affecting in particular how ANT is used. This is further discussed in the second and third chapter.

A final contribution to indicate in this introductory chapter is empirical. Two of the four analytical chapters consider technical negotiations, and very few have analysed those negotiations in detail. Stephan (2012) analysed how REDD+ carbon is rendered tradable. He did not, however, delve into the technical negotiations, as this study does, to explicate the contentious process of constructing the guidelines to monitor carbon quantities and produce carbon credits. Cuckston (2014) considered this to some extent, but this study is likely the first that analyses this process in detail. It does so from an ANT perspective to illustrate how the contestation over carbon trading is not only a struggle of ideas. Rather, the analysis considers how rendering carbon tradable is a struggle between negotiators, forests and monitoring devices affecting negotiators ability to produce rigorous guidelines. The analysis provides a tracing of this struggle, giving readers a detailed impression of how negotiators articulated uncertainties and made compromises, and how this affected the adopted guidelines.

1.2 Data sources

This thesis undertakes a chronological analysis of the REDD+ negotiations, from when REDD+ was first introduced in 2005 to mid-2015 when much of the guidelines had been adopted. The tools used to facilitate the analysis are drawn from governmentality theory, discourse analysis

and actor-network theory, and documents pertaining to the negotiations constitute the primary data source.

Before negotiation sessions, states often submit their views on particular agenda items in ‘negotiation positions’. Inter- and non-governmental organisations can also submit positions if they are invited to do so by states. Furthermore, the UNFCCC has a secretariat that produces technical papers to facilitate negotiations if so requested by states. A range of documents are also produced throughout the negotiations, such as draft negotiation texts and adopted decisions. The analysis is based on a total of 243 such documents. However, two further sources are also used:

- 24 Interviews with representatives from states and non-governmental organisations that made formal submissions to the UNFCCC on REDD+.
- Observations from two UNFCCC negotiation events, comprising four weeks in total.

As further detailed in chapter three, the emphasis of the data lies on the negotiation positions and other official documents. Interviews were used for purposes of corroboration and observations mainly to attain relevant knowledge of the negotiation process.

1.3 Thesis outline

This introductory chapter is the first of nine chapters constituting this thesis. Chapters two and three crafts an analytical framework suitable for an analysis of how REDD+ is rendered governable through the UNFCCC negotiations. Existing literature on climate negotiations in general and the REDD+ negotiations in particular is investigated, and a governmentality

perspective is introduced as highly suitable for the analytical aims of the study. An analytical framework is subsequently devised that operationalises a governmentality approach by combining discourse analysis and ANT. A research design thereafter separates the framework and explains how the first two focal points are analysed by drawing on discourse analysis, and the third by drawing on ANT. The different UNFCCC bodies in which REDD+ is negotiated, and the rules of procedure of the negotiations, are also contextualised, and the methods to collect and analyse the data are described. A final section discusses research limits and reflexivity, and develops the argument that research should be understood as a form of politics.

Chapter four is a background chapter. It describes previous governance initiatives under the UNFCCC and offers a descriptive account of REDD+ in some detail, which is necessary because a part of the analysis is quite technical. Chapter five analyses the rationality of REDD+. It argues that the rationality is aimed at reducing emissions by compensating forest users for incurred opportunity costs when conserving forests, and at connecting forest conservation with carbon markets to trade carbon credits in return for payments. This is thought to reduce emissions cost-effectively while promoting a range of positive ecological and social ‘co-benefits’. The second part of the chapter focuses on later years of the negotiations and analyses how critics challenged the use of carbon markets and questioned whether REDD+ will lead to co-benefits. The chapter concludes by arguing that certain compromises and adjustments were made to the rationality, but by and large it remained unscathed. However, this was only possible by continuously subjugating many of the challenges the rationality was subjected to.

Chapter six analyses what actor constellations are articulated as drivers throughout the negotiations and how they are to be governed through REDD+. It firstly analyses what actors are rendered responsible for deforestation and a range of drivers were articulated as such, including subsistence farmers, industrial producers and consumers in ‘developed’ countries. It

is, however, argued that Parties marginalised drivers in ‘developed’ countries and instead represented subsistence forest users as key drivers of deforestation, both because they were considered cheaper to address, and because they were articulated as such in an adopted decision. The chapter also addresses how forest users are to be governed, and it is argued that the rationality embodies an idea that they are utility-maximising and responsive to economic incentives. However, this idea is based on the subjugation of representations where forest users do not primarily value forests based on economic criteria and where environmental stewardship has other roots. This type of governance is discussed by drawing on Foucault’s understanding of subjects’ conduct as malleable.

Chapters seven and eight analyse negotiations of the monitoring guidelines that create a partial representation of forests. The early years of the negotiations are firstly considered and they showed a great confidence among negotiators that forest carbon could be accurately monitored and therefore rendered tradable. Later years are then analysed by drawing on ANT and it is argued that the earlier confidence waned throughout the negotiations. Several issues were encountered regarding costs, capabilities and monitoring technologies, and this resulted in guidelines where certain parts of forests can be excluded from monitoring and where simplified methods can be employed. This section concludes with an argument that while these simplifications and exclusions may prompt market actors to question the quality of carbon credits, the legitimacy of the UNFCCC process may also subjugate such uncertainties.

The concluding chapter draws the analytical focal points together and summarises the regime of practice as a whole, the challenges it was subjected to, as well as how those challenges were dealt with through processes of validation and subjugation. This paves the way for an argument that the processes follow a rather coherent pattern and manifests a particular

governing strategy. The chapter also highlights the contributions of the thesis and discusses strengths and weaknesses of the methodological framework.

Chapter 2

THEORISING HOW REDD+ IS RENDERED GOVERNABLE THROUGH THE UNFCCC NEGOTIATIONS

During an interview held in 1977, Foucault (1980: 121) was of the opinion that '[w]e need to cut off the King's head'. The head to cut off, however, was not that of a particular king with whom he was on bad terms. Rather, it was the king of political theory, the sovereign nation state. The point Foucault made was that to analyse power, attention should not be reduced to a juridical framework where power relations are theorised solely between the sovereign and the subject, and expressed through the juridical system. Instead, the microphysics of power should be analysed in its complexity, as intersecting relations of force emanating from a multiplicity of locations that, nevertheless, can give rise to more or less coherent rationalities and governing strategies beyond the sole influence of the sovereign.

Translating such ideas of power and governing to the context of rendering REDD+ governable through the UNFCCC negotiations, one is urged to look beyond the immediate context of those actions undertaken by nation states. One must firstly acknowledge that more actors than states are part of the multiplicity of force relations constructing and contesting governing strategies. One must also acknowledge that those actors establishing the rules and regulations for REDD+ can be implicated in such strategies. They can, in other words, be influenced by particular strategies, including the forms of knowledge constituting those strategies, concerned with how REDD+ should be governed and thus how the rules and regulations should be constructed. These two theoretical premises, that more actors than states influence how REDD+ is developed, and that knowledge conditions the actions of those actors, acts as departure points in this chapter.

Based on such premises, this chapter crafts an analytical framework suitable for an analysis of the focal points presented in the previous chapter. In doing so, insights from global governance, epistemic community and Gramscian political economy theories are discussed with regards to their suitability in addressing the focal points. The governmentality concept is subsequently introduced as the approach most suited. However, clear limitations to the operationalisation of a governmentality framework are highlighted, and it is argued that discourse analysis and actor-network theory are necessary complements for an analysis that considers how REDD+ is rendered governable through the UNFCCC negotiations.

2.1 Theories of climate negotiations

Scholars started attending to how the climate was being rendered governable through the UNFCCC negotiations in the mid-1990s (e.g. Rowlands, 1995, Paterson, 1996). This was the decade of the science wars and many scholars of international environmental politics assumed

a postrealist consensus which holds that international institutions do matter, world politics is much more than intergovernmental politics and includes a wider range of actors than states, and world politics is not only about power and material interests but is also about nonmaterial interests, ideas, knowledge, and discourses. (Zürn, 1998: 618)

Scholars were, in other words, heeding Foucault's argument regarding the king's head, and those versions of realism that accorded ultimate authority to sovereign states were questioned from the outset of scholarly engagement with climate negotiations. The UNFCCC was still approached through a state-centred regime-study lens, where regimes are defined following Krasner (1983, in Holzinger and Kütting, 2012: 426) as 'institutions possessing norms, decision rules, and procedures which facilitate a convergence of expectations'. However, in doing so

scholars applied a very reflective use of different state-centred approaches, discussing strengths and weaknesses, and suggested how other theoretical ideas may be usefully incorporated into the study of climate negotiations (Rowlands, 1995, Paterson, 1996).

One approach that is very explicit in seeking to redress the state-centrism of regime studies is global governance. Global governance literature draws attention to other actors influencing climate governance beyond states (Bulkeley and Newell, 2010). Those actors cross public/private divides and span across territorial borders, locating the potential to inform how the climate is being governed on different scales and in different spheres. In seeking to explicate how global governance literature differs from state-centric regime studies, Stokke (1997: 28) argues that

regime analysis tends to study governance through statist lenses, focusing on the creation and operation of rules in international affairs. The term global governance, on the other hand, encompasses not only those phenomena but also situations in which the creators and operators of rules are nonstate actors of various kinds, working within and across state boundaries.

Global governance thus opens up analytical space for considering not only further actors directly engaged in influencing how climate issues are negotiated at the UNFCCC, but also how domestic actors may inform the negotiation mandates of nation states. Furthermore, such a lens draws attention to the development as well as implementation of non-state led initiatives to govern the climate on different scales that operate in tandem with high-level negotiations and resulting governance arrangements. One example here is the voluntary carbon market that exist in a close relationship with, but stand apart from, the market developed through the UNFCCC, and which is driven by other principles than compliance, such as corporate social responsibility (Lovell and Liverman, 2010). Climate governance is thus broadened from being driven by nation states to include a range of actors with diverse motives. A focus on formal regimes is

supplanted by an attentiveness to broad governance systems with multiple and overlapping authorities (Okereke and Bulkeley, 2007).

In terms of formal regimes like the UNFCCC, however, a global governance perspective enables an understanding of how ‘non-state actors have influenced the positions of nation-states or international negotiations’, providing a useful corrective to those regime approaches assuming that negotiation outcomes are solely influenced by states (Bulkeley and Newell, 2010: 10). The approaches non-state actors use to influence negotiations include coalition building, knowledge dissemination and giving suggestions on policy proposals, and a literature has emerged that theorises this influence (e.g. Betsill and Corell, 2001). A global governance perspective therefore ‘conveys the reality of a situation in which a myriad of actors actually take part in the negotiation and implementation of multilateral environmental agreements’ (Okereke and Bulkeley, 2007: 17). A consequence is that negotiation outcomes, the practical rules directing initiatives to mitigate greenhouse gas emissions, may be infused with the agendas of a range of actors beyond the immediate interests of the states that are formally mandated to conduct negotiations. This perspective, then, assumes that, for example, business interest or NGOs representing Indigenous Peoples, may influence the agendas of states during negotiations and shape outcomes.

While this literature is useful to suggest that REDD+ is not only influenced by states and that further interests are in play, it often argues that non-state actors have attained influence or power at the expense of states, a conception suggesting that power is a zero-sum game embodied in actors (Okereke and Bulkeley, 2007). Power is thus invested in actors; the insight global governance literature provides is that further actors have power, it is dispersed. Global governance theorists are interested in who governs and to what ends, and not primarily on what knowledge basis that governance unfolds. Foucault, however, using the terminology of power

rather than knowledge or representations, argued that the '[s]tate can only operate on the basis of other, already existing power relations' (Foucault, 1980: 122). While the state can be understood as a 'meta-power' according to Foucault, it 'can only take hold and secure its footing where it is rooted in a whole series of multiple and indefinite power relations that supply that necessary basis for ... [these] great negative forms of power' (ibid.). While Foucault may have conceded that other actors can be powerful, the point he stressed was that the power states wield is conditioned in certain ways. The state is free to pursue its interests, but in determining those interests the state 'draws upon the theories, ideas, philosophies and forms of knowledge that are a part of our social and cultural products' (Dean, 1999: 16). In the context of rendering REDD+ governable, the arguments of Foucault and Dean suggest that attention should not be solely placed on deliberating states and other non-state actors, but also on the forms of knowledge based on which they engage with each other at the UNFCCC.

Global governance scholars are instructive in suggesting that power is not solely invested in states. However, instead of only viewing it as shared with other actors, power should also be viewed as the ability to structure available knowledge and ideas. The historical events and practices that structure bodies of knowledge cannot always be readily attributed to actors, yet they may structure the decisions states pursue. It was in the previous chapter argued that how something is represented, that is, how knowledge is applied to objects and subjects, is likely to influence how those objects or subjects are governed. In a negotiation setting, states are presented with a range of options based on which they bargain and deliberate. However, those options are already constitutive of an advanced knowledge that structures and limits available options for negotiating Parties. If knowledge itself can be considered powerful, then the conceptual focus must shift from actors embodying power to knowledge itself. If such a shift is undertaken then how REDD+ is rendered governable is as much about powerful states vetoing

certain decisions in a negotiation setting as it is about the knowledge that provided the basis on which states could deliberate in the first place. Acknowledging those insights provided by Foucault, the state, and other actors, ‘invests and colonizes other power relations in a conditioning-conditioned relationship’ (Jessop, 2011: 68), which suggests a research agenda that considers both the role of knowledge and the actors deliberating based on this knowledge. While global governance is attuned to the latter, it provides fewer tools for grappling with the former.

One approach that focuses directly on knowledge is provided by Haas with his concept of epistemic communities. Haas (1992: 3) defines epistemic communities as ‘a network of professionals with recognized expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge within that domain or issue area’. Such a community is seen to provide the relevant knowledge based on which states, and other actors, can deliberate and undertake governance. States may operate based on certain interests or forms of knowledge, but a transferal is thought to take place where the knowledge and suggestions of epistemic communities are allowed primary authority in setting the terms of reference for negotiation actors. In other words, epistemic communities provide the necessary knowledge based on which politics proceeds. Epistemic communities are thus seen as separated from politics and as providing consensual knowledge that ‘can make a significant difference to the formation of international regimes’ (Williams, 2005: 413). Bulkeley and Newell (2010: 8) argue that the Intergovernmental Panel on Climate Change (IPCC) can be seen as an epistemic community ‘with a shared understanding of the causal processes involved in climate change, normative beliefs ... common tests for the validity and knowledge ... and a common policy project based on the need to reduce emissions of [greenhouse gases]’. The IPCC enrolls thousands of scientists that carefully study the global carbon cycle according to strict scientific

principles based on which they suggest future emission scenarios and likely climatic consequences, granting it the status of an authority in the field of climate science and predictions.

However, research on how knowledge produced by the IPCC has been used in a negotiation setting suggests that knowledge is not simply transferred to negotiators that consensually adopt it as authoritative standards. In one example, Paterson (1996: 151) argues that

it was clearly not the case that an epistemic consensus neatly produced international cooperation on the climate issue. Instead, it produces resources for policymakers from different countries (or from within different parts of the state within those countries) to advance positions they preferred – it became another strategic argument at their disposal. Thus, oil producing countries were able to emphasise uncertainties (even those within the limits of the scientific consensus).

Paterson shows that authoritative knowledge claims can be used strategically. States can adopt certain knowledge claims and discard others in order to advance certain agendas. This issue is realised by Litfin (1994: 4) who argues that ‘epistemic community approaches downplay – almost to the point of neglect – the ways in which scientific information simply rationalizes or reinforces existing political conflicts’. Haas (1992: 5) himself concedes that epistemic communities are only influential ‘in areas removed from the political whirl’, suggesting that consensual knowledge transferal is only possible if it is not inserted in settings such as climate governance rife with contentious social and economic considerations.

However, such a statement still assumes that there are situations in which states can produce a disconnection between their past sociopolitical experiences and the issue they are negotiating if only the issue is not contentious enough. The state thus becomes ahistorical and prone to consensus in certain situations, and strategic based on given interests in other

situations. Consequently, the embodied knowledge of actors would be relevant only in those occasions that are directly political, since in apolitical situations IPCC knowledge would be internalised. Such a framework is difficult to operationalise for an analysis of how REDD+ is rendered governable as it would require a model specifying those issues that are contentious and thereby shift focus from epistemic communities to negotiating actors. Furthermore, the above quote from Foucault maintaining that states operate on the basis of indefinite power relations suggests that there can be no form of state authority rid of power relations. While states can be prone to consensus, they can never be ahistorical, which suggests that there would always be a mediation of other types of knowledge when internalising knowledge from epistemic communities. In other words, how actors represent the objects and subjects of REDD+ based on existing forms of knowledge is *always* assumed to influence how they seek to render REDD+ governable.

Critical political economy approaches drawing on Gramsci are more suited to treating knowledge as an artefact that can never be detached from politics. Gramsci's analysis considers class struggles, just like Marx, but instead of following Marx to suggest that a dominant class is able to rule by having a monopoly on the means of production, Gramsci suggested that rule, or hegemony, is established in a much more consensual way where knowledge is a key aspect. Hegemony is facilitated by creating 'in people certain modes of behaviour and expectations consistent with the hegemonic social order' (Cox, 1983: 164). Rule is here consensual and enabled through leadership as well as the influence of cultural products and educational systems, so as to 'define the "limits of possibility" within the polity but also to set ... [the interests of the ruler] in universal terms' (Okereke and Bulkeley, 2007: 24).

Thus, instead of having the IPCC produce consensual knowledge according to principles of scientific rigour and validity, this approach allows for the same type of knowledge production

but according to strategic interests from the onset. Instead of states possibly distorting scientific knowledge through a strategic use of that knowledge, in a Gramscian account knowledge is already strategic and used to influence the ways in which actors perceive issues as well as the solutions to those issues. To exemplify, scholars have researched how a neoliberal economic order influences how state and non-state actors work to mitigate climate change (e.g. Lohmann, 2006). If a Gramscian interpretation is applied to such an account, states as well as non-state actors would be understood as implicated in a ‘neoliberal economic order [that] serve[s] to shape debates on what states ... [and non-state actors] can and cannot do in response to the threat of climate change’ (Okereke and Bulkeley, 2007: 24). Solutions that would compromise economic growth and affluent living standards, with associated consumption patterns, in industrialised countries would, for example, likely be considered outside of the ‘limits of possibility’.

A further difference from epistemic community approaches is that Gramscian approaches do not suggest that events can unfold in a consensual or non-contentious manner, where knowledge is disconnected from the political and aimed at, for example, scientific accuracy. Rather, if knowledge is not strategically produced towards certain neoliberal ends, then it is produced and wielded to further counter-hegemonic struggles. These struggles are viewed dialectically where social institutions become ‘simultaneously a site for the maintenance of, as well as challenges to, hegemony’ (Ford, 2003: 132). The REDD+ negotiations would here be viewed as such a site in which a market-based hegemony is both challenged and maintained, where the ‘limits of the possible’ is structured around contested market-based mechanisms. It can be argued that such a struggle is taking place within the negotiations. REDD+ was advanced based on the establishment of a market-based mechanism, but certain Parties and non-state actors have sought to reject that market frame for an approach where international funds pay

for carbon sequestration (see, for example, Stephan, 2013: 100). It follows that there is no space in the analytical framework for consensus; rather, two poles in hegemonic and counter-hegemonic knowledge struggles are suggested. This is more in line with the above quote from Foucault suggesting that states always operate on the basis of power relations that favour certain forms of knowledge and actions. Both theories reject instances where actors operate outside of strategic knowledge politics. In the REDD+ negotiations, attention would thus be drawn to the knowledge used by different actors because such knowledge would never be assumed to be unbiased. Rather, it would be expected to be implicated in strategies and advanced towards certain ends.

However, Gramscian perspectives do not provide an account of ‘the constellation of micro socio-cultural dynamics that so often determine how a given policy plays out in the local level’ (Okereke and Bulkeley, 2007: 28). The perspective retains a macro focus structured around a neoliberal hegemony and a dialectical struggle with counter-hegemonic forces. It may be empirically fitting in explaining the market frame and critiques thereof, but it minimises the role of the different agenda items being negotiated. All negotiation positions and the knowledge forwarded within them would be allocated to either a hegemonic or a counter-hegemonic strategy, thereby omitting the possibility of negotiation positions and forms of knowledge that may not be readily applied to either of the two. Many agenda items in the REDD+ negotiations that influence in what ways REDD+ will be governed do not directly concern the use or not of markets. For example, aside from negotiations considering the vices and virtues of markets, agenda items include the rights of forest users, considerations of biodiversity, drivers of deforestation, and a range of technical elements such as forest monitoring systems. To continuously allocate these agenda items to one of the two poles in hegemonic and counter-

hegemonic struggles would require an abstraction that risks obscuring the diversity of issues being negotiated.

Global governance literature broadened the state-centric approach to include agendas and principles beyond the immediate self-interest of states. Gramscian approaches, however, confine those agendas and principles to a strategic game between two poles and while this ‘macro focus’ may be useful to analyse parts of the REDD+ negotiations, for example whether REDD+ should be market-based or not, it obscures those more micro-level knowledge strategies of the negotiations that are just as important for how REDD+ is being rendered governable.

2.2 Governmentality

Research on how the climate is being governed that draws on Foucault’s governmentality concept gives closer attention to such micro aspects. Governmentality research applied to climate governance is quite distinct from other approaches, which is why a certain amount of elaboration in addition to that of the previous chapter is necessary.

It has been explained that Foucault viewed governmentality both as a specific form of power or governance, and as a mode of analysis (Foucault, 1991a, 2008). With regards to the former, Foucault (1991a) discussed three forms of power. The first form was that of the sovereign, the king that Foucault sought to dethrone. The second was characterised by a disciplinary society where surveillance apparatuses organised peoples’ activities and behaviours (e.g. Foucault, 1977). Foucault called the third form ‘government’, and he described it as an ensemble formed by ‘institutions, procedures, analyses and reflections ... which has as its target [the] population ... [and] its principal form of knowledge political economy’

(Foucault, 1991a: 102). The neologism ‘governmentality’ is an amalgam of the two words government and mentality, and Foucault used it to suggest that his third form of power, government, does not ‘exist without a certain regime of rationality’ (Foucault, 1991b: 79) that directs governance towards specific issues and bases it on certain principles. The ‘ensemble’ governing the population can therefore be conceived as based on a certain rationality articulating the population as a problem that should be governed, and political economy as a useful form of knowledge to this end.

Foucault, however, also suggested that governmentality can be used as a mode of analysis and this is an aspect that post-Foucauldian scholars have substantiated in detail (Miller and Rose, 1990, Rose and Miller, 1992, Dean, 1999). In doing so they retain the idea that governing is based on certain rationalities with particular forms of knowledge addressing specific problem formations, but not necessarily that the population is always the target of governance and that the principal form of knowledge is political economy. REDD+ can from such a perspective be understood to be based on a rationality influenced by forms of knowledge resonating with the concept of sustainable development. Moreover, it addresses the particular problems of deforestation and climate change, and targets forest users rather than whole populations.

This mode of analysis also considers how rationalities come to embody particular representations of the objects and subjects that are the targets of governance. Miller and Rose (1990) borrowed the term inscription from Bruno Latour, one of the founders of actor-network theory, to propose an empirical way to analyse this process. They argue that one should attend to:

[t]he particular technical devices of writing, listing, numbering and computing that render a realm into discourse as a knowable, calculable and administrable object. ‘Knowing’ an object in such a way that it can be governed is more than a purely speculative activity: it requires the invention of procedures of notation, ways of collecting and presenting

statistics, the transportation of these to centres where calculations and judgements can be made ... It is through such procedures of inscription that the diverse domains of ‘governmentality’ are made up, that ‘objects’ such as the economy, the enterprise, the social field and the family are rendered in a particular conceptual form and made amenable to intervention and regulation. (Miller and Rose, 1990: 5)

The set of mundane devices and practices they recount represent objects in certain ways; objects are inscribed in a conceptual form that facilitates their governance. In the case of REDD+, for example, the practices of monitoring forests and accounting for changes in carbon quantities have the effect of representing forests as containers of carbon that facilitates an increased manageability and, potentially, carbon trading. The devices that undertake the inscription of objects and subjects are often called ‘technologies’. Technologies therefore both undertake practical forms of governing and ‘operationalise governmental rationalities and construct the very “objects” of government as in some sense “knowable”’ (Rose-Redwood, 2006: 475). Technologies can therefore be considered the operative arms of rationalities, and as the lengthy quote above alludes to, they are often highly complex and multifaceted.

One should, however, not describe the relationship between rationalities and technologies as always causal or intentional. Miller (2007: 338) suggests that through ‘their day-to-day conceptual and practical work, scientists classify and reclassify the subjects and objects of nature and society, carving up the world into distinct ontological types and occasionally creating entirely new taxonomic categories’. Such inscriptions represent governance objects in particular conceptual forms that facilitate the application of particular types of governance arrangements. These various arrangements, in turn, provide their own inscriptions and thus increase the available knowledge of the objects being governed, which may alter how rationalities conceive of the named objects. These processes are historical and multifaceted, which is why clear-cut notions such as rationalities and technologies should be approached as

abstract heuristics, and their relationship may be described as decentered and iterative rather than causal.

It is in this way that the rationality of REDD+ is understood to embody particular representations of the subjects and objects that are the targets of governance. However, technologies do not only represent subjects, they are also assumed to shape them. Stephan (2013: 18), for instance, argues that rationalities and technologies both ‘form and presuppose particular identities’. The basis of such a proposition is the assumption held by Foucault that subjects are never ontologically free:

I do indeed believe that there is no sovereign, founding subject, a universal form of subject to be found everywhere. I believe, on the contrary, that the subject is constituted through practices of subjection, or, in a more autonomous way, through practices of liberation, of liberty. (Foucault, 1988: 50)

Subjects are constituted either through practices of subjection, which concerns Foucault’s first two forms of power detailed above, or through practices of liberty where subjects are free to pursue their undertakings, but where their conduct is ‘perpetually responsive to modifications in ... [their] environment’ (Gordon, 1991: 43). This constitution of subjects through practices of liberty was the basis for how Foucault theorised the governance of subjects in liberal societies (Foucault, 2008).³ The key point is that the complex of institutions, procedures and analyses comprising his third form of power have effects, not primarily because subjects are governed through force or discipline, but because they are malleable and modifications in their socio-cultural environment can ‘shape, guide or affect the[ir] conduct’ (Gordon, 1991: 2). This is

³ An impressive literature has emerged out of Foucault’s work on liberalism, focusing on this characteristic of subjects and how advanced- or neo-liberalism conducts free individuals by governing at a distance towards particular ends (Rose and Miller, 1992, Rose, 1996, 1999).

relevant for REDD+ given that the scheme can entail stark changes to the everyday lives of forest users.

Rationalities and the representations of governance objects and subjects they embody can be understood as historically contingent forms of knowledge facilitated through inscriptions and targeted towards particular problem formulations, rather than, for example, governing strategies devised by a ruling sovereign or class. Given this historical, decentered and iterative understanding of rationalities and technologies, the political negotiations under the UNFCCC would not be seen as the singular decisive moment that renders REDD+ governable. However, Foucault (1991a: 102) argued in his lecture notes on governmentality that

we need to see things not in terms of the replacement of a society of sovereignty by a disciplinary society and the subsequent replacement of a disciplinary society by a society of government; in reality one has a triangle, sovereignty-discipline-government...

Foucault thus realised that the power of the sovereign is not obsolete. It is instead, as previously argued, conditioned according to available forms of knowledge (see also Jessop, 2011).

In the context of the negotiations, this suggests that states have a role to play in shaping the rationality of REDD+ and how it represents objects and subjects. Negotiators have an advanced knowledge of those objects and subjects that are being rendered governable through REDD+. This knowledge is historical and facilitated through a diverse array of actors and inscriptions beyond the purview of negotiators (e.g. Boyd, 2010). This knowledge is also not uniform. Forests and forest users can be inscribed and represented in different ways. For example, forests users may be represented as culprits responsible for deforestation or as suitable forest stewards. Similarly, forests may be inscribed as vital containers of biodiversity or as solely containing carbon. Negotiators with their mandates and strategic interests may choose between competing ways to represent the objects and subjects of REDD+ to advance suitable

governance arrangements based on those representations. In other words, negotiators through the powers invested in their sovereignty, and non-state actors through alternative means (Betsill and Corell, 2001), are, to some extent, able to structure how REDD+ is rendered governable.

Applying a governmentality lens to the negotiations facilitates an understanding of the underlying and often unstated rationalities and representations that guide governance initiatives. Epistemic community approaches assume that such forms of knowledge are consensually provided by an acknowledged authority. Gramscian approaches posit hegemonic and counter-hegemonic strategies, assuming that knowledge is strategically advanced according to the two strategies. A governmentality framework, as it is used here, disbands with both consensual knowledge as well as hegemonic and counter-hegemonic strategies. It does not presuppose a particular locus or origin of rationalities and representations, and it does not qualify them as belonging to particular strategies, be those consensual or not. As stated above, Foucault viewed states' exercise of power as based on multiple and indefinite relations of power conditioning their agency, which suggests that a multitude of actors provide and transform the knowledge based on which states act.

A governmentality framework therefore focuses on the rationalities and representations rather than potential macro strategies directing the supply and use of them. Within this micro focus on knowledge, rather than a macro focus on strategy, however, a governmentality analysis allows for the consideration of a strategic use of these forms of knowledge by Parties and non-state actors in a negotiation setting as explained above, entailing that it is entirely possible that more or less coherent strategies materialise through analysis. That is, the Gramscian framework of hegemonic strategies is not assumed, but can be a possible end point of analysis. The benefit of a governmentality framework is therefore a direct focus on knowledge politics, where certain rationalities and representations come to guide action while others are obscured through

negotiations, rather than a focus on strategy with an analytical compartmentalisation of knowledge according to strategies.

However, one problem with a governmentality lens is that it provides few tools to operationalise an analysis of the REDD+ negotiations, and this is in part because few governmentality publications have considered climate negotiations. Governmentality scholars have instead mainly analysed three different aspects of how the climate is being rendered governable. They have studied, often through a historical perspective, the procedures through which the climate has been represented as a domain that governing instruments can be applied to (e.g. Oels, 2005, Lövbrand et al., 2009, Lövbrand and Stripple, 2011b, Paterson and Stripple, 2012). They have also considered how governance is practically undertaken, often through technical instruments. As suggested above, particularly through the lengthy quote by Miller and Rose, technical and practical devices inscribe governance objects and subjects in conceptual forms that enable governing on the one hand, and on the other they provide the material infrastructure through which schemes such as REDD+ operate.

Here scholars often draw on science and technology studies and/or actor-network theory,⁴ because as Lövbrand and Stripple (2014) observe, that scholarship has extensively studied practical and material aspects of market construction (e.g. Lovell and Liverman, 2010, Lovell and MacKenzie, 2011, Gupta et al., 2012, Lövbrand and Stripple, 2012, Lovell, 2014a). Finally, the third aspect they have focused on is how subjectivities are constituted through these instruments and practices. The same relationship between representation and action is advanced here. If subjects are classified and understood in certain ways, then those ways may influence the practical initiatives that seek to govern them, and this is assumed to act as a form of

⁴ Actor-network theory is further discussed below.

subjectification where particular types of subjectivities can be moulded (e.g. Paterson and Stripple, 2010, Descheneau and Paterson, 2011, Lövbrand and Stripple, 2011b).

Taken together, governmentality scholars have been hugely beneficial in expounding how the climate is currently being governed. As stated, however, few publications have focused on climate negotiations (but see: Boyd, 2010, Death, 2011, Stephan, 2013). This literature is very slim, and one reason for this scarcity may be that there are two arguments within governmentality literature for *not* focusing on negotiations. One argument is provided by Descheneau and Paterson (2011: 663) who state that most publications on carbon markets are state-centred and focused on market creation ‘through regulation or the explicitly political dynamics surrounding them’, omitting an ‘enormous gap between a policy mechanism ... and the markets which are constructed around it’. They thus point to a saturation of research on how states create markets. This argument then works to legitimise a focus on procedures of subject formation or the technical devices necessary for carbon markets to function. This argument may, however, not be strong with regards to REDD+, because the scheme is currently being developed and scholarly attention is still slim, not least from post-structural perspectives.⁵

A different argument for not focusing on negotiations is that the governmentality concept is based on an explicit rejection of the sovereign state as the sole locus of power, as mentioned above. Instead of asking *why* the state governs in certain ways, governmentality scholars are interested in *how* governance is undertaken in practice. Lövbrand and Stripple (2014: 32) argue that ‘[t]he focus on “how” questions both arises from a rejection of any a priori understanding of the distribution of power or location of rule, and instead an interest in the very practices, rationalities and identities by which governing operates’. In other words, *how* rationalities operate is the preferred analytical focal point since actors, including states, that govern do so

⁵ However, see the below section on discourse analysis for a selection of publications analysing the REDD+ negotiations.

according to certain forms of knowledge. However, as has been argued and as Foucault suggested, states still retain power invested in their sovereignty. While conditioned according to forms of knowledge, they also have the ability to structure how climate issues are represented and acted upon through the negotiations. It is therefore pertinent to complement existing governmentality research with an analysis of the negotiations.

Slim attention to negotiations reproduces what can be called an empirical limitation within certain governmentality publications. Stephan et al. (2014: 59) argue that ‘accounts of governmentality often neglect the heterogeneity and “messiness” of governmental regimes’. Many publications in one way or another realise that the development of rationalities and technologies are far from consensual processes. However, by focusing on *how* governing is practically undertaken, contesting ambitions in stages of development are often not considered at length. This may produce analytical outputs in which those instruments that govern the climate appear unchallenged, and this is another reason why attention to the negotiations is important.⁶

Omitting negotiations, perhaps by arguing that scholars of other theoretical persuasions saturate that empirical focus, entails that the particular lens of governmentality theory attentive to rationalities and representations is not applied to that locale. Global governance scholars are well suited to consider certain forms of contestation and *realpolitik* within a negotiation setting, but not to analyse how governmental regimes depend on the continuous subjugation of alternative forms of knowledge. Analysing how proposed policy options depend on particular representations of forests and forest users problematises those policies because it shows how they are dependent on the obscuring of those representations that are marginal and critical. In

⁶ It is also important to study the contestation and impact of these governmental powers in other venues, including in more local settings. This is, however, beyond the scope of this research project.

other words, policies that may appear natural and common sense become questioned and dependent on the subjugation of alternatives if attention is placed on contesting representations.

The body of knowledge that governmentality scholars has produced is, for the most part, not attentive to subjugated forms of knowledge articulated in a negotiation setting. The next section recounts a few discourse analyses that have been undertaken on the REDD+ negotiations and argues that it is an approach well suited to substantiate governmentality research in a negotiation setting. Indeed, discourse analysis is used to operationalise a governmentality framework in this study. It will, however, be argued that a discourse analysis cannot undertake such an operationalisation on its own due to it often being confined to the study of ideational aspects, and this is also why discourse analysis should not substitute governmentality research and be the sole post-structural alternative when it comes to climate negotiations. This is further elaborated in the following.

2.2.1 Complementing a governmentality framework with discourse analysis

Stephan (2013), one of the scholars noted above that have utilised governmentality theory to study the REDD+ negotiations, operationalised his theory through a discourse analysis derived from Foucault. There is a theoretical fit between discourse analysis and governmentality studies because both postulate a relationship between presentation and action. In the case of discourse analysis, however, the relationship is often phrased as being between discourse and policy. There are numerous understandings of what discourses are, how they may change, and how their relationship with subjects should be understood (Jørgensen and Phillips, 2002). However, for the purpose of a governmentality framework, the term is synonymous with representation and the ontological basis of representations has been specified above as historically contingent forms of knowledge facilitated through inscriptions. Subjects make sense of the world through

representations, or discourses, which is why representations are taken to be closely linked with how the world, including subjects and objects therein, is acted upon. Moreover, a governmentality framework assumes that actions may transform representations, which in turn may affect future actions. In other words, representations are not seen as static. The benefit of discourse analysis here is that sustained methodological development has produced fine theoretical tools for the analysis of representations.

Feindt and Oels (2005: 163) suggest seven strengths of discourse analysis, five of which are relevant to further illustrate the use of the approach:

- (i) a particular awareness of the role of language in constituting policies, politics and politics;
- (ii) a sceptical attitude toward claims of a single rationality and objective truth;
- (iii) an inclination to regard knowledge as contingent and principally contestable;
- (iv) an interest in bias effects of dominant types of language and knowledge;
- (v) [and] a shared understanding that language and knowledge need to be understood as an aspect of power and as exerting power effects...

The first point suggests a constitutive relationship between language and policies, where language, in visual, textual and oral forms, should be understood as the medium through which representations are realised. This point is therefore synonymous with the postulate of close links between representation and action. The second point relates to the first; if language affects how policies can be constructed, then this is because language affects how the objects and subjects of the world are understood and subsequently acted upon through policies. It thus follows that ‘truthful’ descriptions of objects and subjects are always mediated by the limits set by representations and the politics through which those representations were developed.

The third and fourth points indicate that if the former two are considered reasonable, then certain ways of representing subjects and objects can become dominant at the expense of other

ways and since representations are constitutive of policies, such dominant forms will have far-reaching effects. For example, if negotiators represent forests solely as containers of carbon, as opposed to also harbouring a range of diverse species, then such representations can be adopted as governance directives specifically seeking to govern carbon at the expense of arrangements that also consider biodiversity. Discourse analysts therefore have an interest in contesting knowledge claims and various types of bias, which is here understood as the domination of one type of representation over other types, and to suggest what policy effect those representations may have. If these four points are accepted then the fifth point is evident if power effects are defined as those activities where certain forms of knowledge become dominant at the expense of others, and where this has practical policy effects.

The strengths of discourse analysis, then, dovetail with the ambition to analyse the politics of representation throughout the REDD+ negotiations to problematise adopted governance arrangements as dependent on the subjugation of other forms of knowledge. Given the suitability of the approach to the analysis of politicised contexts, a range of discourse analyses have already been undertaken on REDD+. Attention has been given to media discourses in countries where REDD+ is being implemented (Pham, 2010, Di Gregorio et al., 2013), national policy discourses in implementing states (Somorin et al., 2012, Luttrell et al., 2013), and prominent multilateral actors assisting with capacity building for REDD+ implementation (Thompson et al., 2011, Holmgren, 2013). A small number of publications have focused on the negotiations (Hiraldo and Tanner, 2011, den Besten et al., 2013, Nielsen, 2013, Stephan, 2013). These latter publications provide, among other insights, examples of how REDD+ policies depend on particular representations and how such representations have been contested throughout the negotiations. In doing so, these discourse analyses show how REDD+ governance is based on struggles and contingencies where certain forms of knowledge have

been subjugated. However, article length publications are by necessity condensed. Even though the publications provide valuable insights into the topic of contestation, they have not substantiated the struggles that occur over all aspects of REDD+ in detail.

Discourse analysis is thus suitable to operationalise a governmentality framework, and in doing so it contributes to addressing the empirical limitation of not considering representational struggles in that approach. While this section has detailed the theoretical affinities between governmentality theory and discourse analysis, and elaborated on the strengths of the latter, the practical methods for undertaking an analysis of representations are further detailed in the next chapter. Despite the congruence between the two, discourse methods cannot operationalise a governmentality framework on its own, because such methods most often focus exclusively on ideational aspects whereas a governmentality framework seeks to incorporate material aspects and technical devices. As stated above, technical devices undertake practical forms of governance. They are part of the sociotechnical infrastructure that governs the climate in practice and are therefore part of the analytical terrain of governmentality scholars. However, such devices also enable inscriptions through which objects and subjects are represented in conceptual forms that suggest suitable ways for how they can be governed, and this is highly relevant in a negotiation setting where Parties negotiate based on such representations. Discourse analysis is suited to consider contesting representations, but not how technical devices help construct representations, and this is why it should not replace governmentality theory and be the predominant post-structural approach when the empirical focus is applied to climate negotiations.

Lövbrand and Stripple (2014: 36) argue that the interest of governmentality scholars ‘in the practical dimensions of carbon market governance resonates with the work of market sociologists and actor-network theorists’. ANT, which is further elaborated in the next section,

is an approach that is more suited to consider how technical devices structure representations: indeed, such devices and the materials they register, such as forests, are through ANT allowed a certain degree of agency to influence how REDD+ is developed. An analysis of the negotiations does, however, not directly consider inscription devices, such as satellites monitoring forests, but it does so indirectly since they structure the representations based on which Parties negotiate. These devices, and the material properties they register, set limits for the negotiations. Discourse analysis is suitable for an analysis of representations and how those relate to governance arrangements, whereas ANT is suited for an analysis of how technical devices and material properties structure representations. It is rather difficult to state this argument with conviction before explaining ANT in some detail. The next section therefore elaborates on ANT to suggest more clearly how it can be a useful complement to discourse analysis in operationalising a governmentality framework.

2.2.2 Complementing a governmentality framework with actor-network theory

ANT is a rather complex theoretical corpus, which means that its use to operationalise a governmentality framework can only emerge after a certain amount of elaboration. This is facilitated through a few of John Law's ANT core principles, as they provide a reader friendly introduction (Law, 2009). The first principle is the one of *heterogeneous networks*. Latour (2005: 132) argues that 'a network is not made of nylon thread, words or any durable substance but is the trace left behind by some moving agent'. A network is thus a trace of something, and not that something in itself. Negotiation outcomes are constructed by deliberating Parties. However, as has been stated above, negotiations are undertaken based on representations of forests as registered through all those inscription devices through which forests are made sense of. As is successively argued throughout this section, through ANT those outcomes can be

understood as constructed through interactions between negotiating actors, inscription devices providing representations, but also the material elements those devices inscribe. These interactions, Latour (2005: 132) argues, are ‘physically traceable and thus can be recorded empirically’, and the term network here designates the detective trail that is followed by the researcher, and not some matter existing in Euclidean space.

The second principle of *generalised symmetry* has been heavily criticised since it quite provocatively seems to hold that ‘in addition to human subjects, the nonhumans and objects are seen as having *agency*, a capacity to “act”’ (Rimpiläinen, 2012: 28, emphasis in original). Non-human agency has spawned much critique from many corners of the academic world (e.g. Mutch, 2002, Whittle and Spicer, 2008). No matter how far we are willing to compromise with intuition, sympathetic observers seem to say, it will always be easier for a human to move a stone than for a stone to move a human. These critics are right and Latour (2005: 76) therefore strongly argues that

ANT is not, I repeat not, the establishment of some absurd ‘symmetry between humans and non-humans.’ To be symmetric, for us, simply means not to impose a priori some spurious asymmetry among human intentional action and a material world of causal relations.

This principle does therefore not entail that forests have powers equal to humans in determining the outcomes of the REDD+ negotiations. Rather, and this should also be understood in relation to ANT’s preference for ethnography and the rejection of pre-theorised explanations for agency (such as master categories of ‘class interests’ in Marxist literature or ‘self-interest’ in neo-classical economics), the argument is merely that one should ‘abstain from making *a priori assumptions of asymmetry* that would automatically privilege the human as the source of action’ (Rimpiläinen, 2012: 29, emphasis in original). To explain how negotiation

outcomes are constructed, one should not adhere to named master categories as explanatory factors. One should instead rigorously study the actors, inscription devices and materials of the network to trace how they together establish negotiation outcomes and only at that point attribute explanation to categories such as self-interested individuals or economic interests. If one has this micro focus, this ethnographic lens, where networks of other orders (such as theories of class or capital) only hover in the background without direct power to explain, then it becomes more reasonable to attribute an ability of material objects to have agency within networks if one by agency denotes ‘*causing an effect in states of affairs ... by interrupting, diverting, assisting, preventing events taking place*’ (Rimpiläinen, 2012: 29, emphasis in original).

Within a network of relations, the agency of humans becomes entwined with other humans and non-humans. While certain negotiating Parties may want to have all carbon emissions from forests registered in REDD+, it may be that those negotiators are discouraged not only by other Parties, but also by inscription devices failing to register and conceptualise all those emissions. It is in this limited sense that ‘nonhumans are in effect “levelled up” to the status of humans, and the humans are “levelled down” to the status of nonhumans’ (Laurier and Philo, 1999: 1060). However, while the agency of non-humans is strictly limited in this way, it is a fact that much of the critical social sciences disregard non-humans altogether and this would be to greatly underestimate their importance according to ANT scholars (Latour, 2005).

To have agency, in this understanding, ‘does not necessarily require speech or intentionality as we normally understand it’ and the capacity to act will depend on the placement of humans or non-humans within networks. (Castree, 2002: 121). The ability of forests to influence the REDD+ negotiations on the topic of the rights of forest users is much smaller than for more technical topics regarding forest monitoring. In the former case, it is unlikely that forests may directly block certain decisions. In the latter case, however, it may be that

inscription devices fail to adequately monitor certain types of ‘carbon pools’, such as forest soils that can be quite difficult to monitor. In such a case it is possible that a decision seeking mandatory monitoring of soils is discouraged despite Parties favouring such a decision.

The third principle is *translation*. Here ANT scholars are not predominantly interested in translation between languages. Rather, all humans, materials and inscription devices implicated in an attempt to create negotiation outcomes were somehow influenced by other elements of the network during this attempt. The different elements caused an effect in the state of affairs for other elements of this particular network. That is, forests were conceptualised through inscription devices that registered certain of their characteristics – they were not left to their own devices. Negotiators were employed and put to work to understand forests through inscription devices based on certain mandates – they did not continue with their original job whatever that may have been. During the negotiations, the ways forests were represented and the positions of the negotiators were compromised, shuffled and strengthened in order to craft the outcomes. They were all affected in different ways in order to produce a more or less stable object in the outcomes. This change in the actors and materials is what is called translation. Translation is vital, because if the different actors and materials would not have been affected by other actors and materials, no outcomes would have been agreed. In short, the creation of any object, material or immaterial, will always require translation (Callon, 1986), and this creates the detective trail that is followed by the researcher.

While Lovell (2014a) has applied ANT and the translation concept to REDD+ to discuss forest monitoring, Cuckston (2014) is likely the only scholar that has applied ANT to analyse a part of the REDD+ negotiations.⁷ Through his analysis, Cuckston (2014: 95) argues that

⁷ There is, however, a substantial literature applying ANT or related perspectives to analyse climate governance more broadly. Some such publications were noted in the governmentality section above and others include Callon (2009), MacKenzie (2009), Lane (2012) and Lansing (2012), all analysing various aspects of carbon market construction and performance.

‘tropical forests themselves are ... seen to be resisting attempts to pacify their complex agencies’. He discussed in particular how pacifying the agency of degrading forests caused considerable difficulties for Parties. Forest degradation is more difficult than deforestation to detect and monitor since it designates carbon loss in forests that are not completely cut down. Satellites and other equipment cannot without heavy costs measure such activities. Forest degradation thus complicated the adoption of clear negotiation outcomes specifying how it should be considered within the REDD+ mechanism.

This thesis builds on these contributions and uses ANT to complement discourse analysis when operationalising a governmentality analysis of REDD+. Certain empirical limitations in governmentality scholarship were noted above. They seldom consider contestation in the development of rationalities and representations influencing governance initiatives. Discourse analysis is therefore complementary as it provides tools for analysing such contestation. ANT offers a different addition to governmentality theory. It provides tools for the analysis of how other actors, non-humans, can be seen to contest certain proposed governance arrangements. This contestation can through ANT be analysed as a translation between humans, inscription devices and non-humans. The value of ANT is therefore that it also addresses the empirical limitation of governmentality scholarship and this in a way that discourse analysis is not suited for. Together, the two approaches cater for an understanding of the messiness and heterogeneity Stephan and others called for, and this provided by both humans and non-humans. In other words, the development of the REDD+ will be seen as a process with opposition coming from contesting humans and beyond.

However, just like Cuckston’s (2014) analysis had certain limitations resulting from it being desk-based, only a partial application of ANT is possible to operationalise here. A network is seldom confined to jurisdictional boundaries such as those of the UNFCCC

negotiations. Parties negotiate on the basis of forests already being inscribed through technical devices that conceptualise forests in certain ways. The analysis does not directly consider such devices, for example satellites monitoring deforestation, and how those devices interact with the material properties of forests. Rather, it considers how, based on already provided conceptualisations, Parties seek to translate other Parties around certain negotiation outcomes on the one hand, and on the other to what extent non-humans support or discourage such outcomes. An ANT analysis is thus confined to representations of forests through technical devices making it very similar to the discourse analysis suggested above. However, there is a key difference in that an ANT analysis lends itself towards empirical tracing of inscription devices that enable and structure representations, whereas discourse analysis is more suited for a study of how representations are contested in cases where inscription devices are unknown. This difference requires further elaboration, and this is undertaken in the next section.

2.2.3 Integrating discourse analysis and actor-network theory

As argued above, inscription devices conceptualise forests in different ways. They can focus on the same quality of forests, such as carbon, and detect different amounts. They can also focus on other aspects of forests, such as species richness or the humans that populate forests. Such conceptualisations are representations that are used to facilitate the REDD+ negotiations. Representations are always dependent on inscription devices. Knowledge is always mediated, but how and through what inscription devices is not always clear. In the more technical negotiations, inscriptions devices are fewer and more readily available. A discussion on how carbon should be quantified simply negates many ways of inscribing and representing forests. For other agenda items, however, Parties can draw more freely on other inscription devices to produce representations. Such devices do not have to be technical, such as satellites taking

pictures through which rates of deforestation can be estimated. On the contrary, the sources used to attain and articulate knowledge of an object or subject when the topic does not concern a particular inscription device can be practically untraceable given the multitude of actors, events and devices that have helped shape the development of a representation. It follows that it is entirely possible that the articulator of a representation does not know the inscription devices used to produce that representation. The argument set out in the following paragraphs is that it is only analytically feasible to consider non-humans for the technical negotiations where inscription devices are often readily available, because if such devices are not available it is difficult to suggest how materials promote or discourage certain decisions.

As a hypothetical example, in the technical negotiations a Party can state that ‘satellite technology facilitates accurate monitoring of deforestation but not degradation’. The Party can use this inscription device to seek to convince other Parties that a negotiation outcome requiring mandatory monitoring of deforestation is suitable. However, it would be less successful in convincing Parties that mandatory monitoring of degradation is appropriate given that the inscription device cannot adequately monitor it. In ANT terminology, such convincing is often called ‘enrolling’. In this example, Parties would enrol other Parties in what can be called a ‘network constellation’ that supports a negotiation outcome specifying mandatory monitoring of deforestation, but not degradation. This temporary constellation would enrol Parties, but also the inscription devices used as well as the physical activity of deforestation because they are perceived to support the decision.

A degree of complexity is expected, because inscription devices do not represent forests in the same way. Parties may reject enrolment attempts by pointing to other inscription devices representing forests differently. Also, the material properties of forests as registered through the inscription devices will favour certain outcomes and discourage others in these enrolment

attempts. When a Party suggests enrolment according to the mentioned hypothetical inscription device, forest degradation (as opposed to deforestation) will resist enrolment. However, if a Party suggests enrolment according to another inscription device that represents forests differently, the ability of forests to resist also alters. For example, a new laser-based technique to monitor degradation may be developed. In this case degrading forests cannot resist enrolment but other Parties may protest and argue that the new lasers are too expensive. Parties can thus switch network constellation and this affects the agency of forests. It is in this within-network sense that forests have agency, and this can be analysed through ANT.

However, forests and inscription devices are only bestowed agency because Parties interpret the data produced by the devices and subsequently perceive them to favour or discourage decisions. This layer of interpretation cannot be removed in this study given its reliance on UNFCCC documents. This understanding of agency is, however, still useful because it facilitates an analysis of how Parties perceived non-humans to resist enrolment, in turn affecting the adopted monitoring criteria with its possible simplifications and exclusions. This study does not aim to objectively ascertain the ‘true’ resistance offered by non-humans, but rather to open up the ‘black box’ of the negotiation process with its articulations of uncertainty and resulting simplifications and exclusions. The stated limitation is permissible given the ambitions of the study.⁸

It is more difficult to trace the influence of non-humans in other situations. In another hypothetical example a Party may state that ‘when undertaking a REDD+ project, safeguards should be in place to ensure that biodiversity is maintained’. This statement may be used by a Party to enrol other Parties to support a negotiation outcome where biodiversity safeguards are mandatory. In this example, however, forests themselves play no part in the decision. Parties

⁸ This limitation is discussed further in the concluding chapter.

may, or may not, choose to consider biodiversity, but the species themselves making up biodiversity have no impact on the decision. Later on, if Parties would enrol to support the outcome, methodologies would have to be applied to count biodiversity, and in such a scenario biodiversity may be more able to object to certain methodologies. Methodologies used would be inscription devices through which species richness is estimated and it is possible that certain methodologies would result in unreasonable variations, perhaps because they are not suited for tropical forests and do not detect certain species. In such a case the species would have a within-network agency to discourage a methodology. However, in the hypothetical statement such methodologies are not under consideration, which means that biodiversity do not take part in the network constellation that supports or discourages negotiation outcomes on safeguards.

Yet the statement still contains representations. Most explicit, forests are represented as something more than just carbon. How these representations came about, their genealogy, is unknown, but discourse analysis can be applied to probe deeper into how the representations are contested throughout the negotiations. It may be that certain Parties are not keen on such safeguards, and this may be stated in a discursive context in which forests are represented differently. Perhaps there is a sole focus on the feasibility of carbon sequestration and the biodiversity of forests is omitted. In yet another example where discussions concern forest users, it may be that they are represented as suitable forest stewards, or perhaps as responsible for deforestation. This attachment of attributes helps construct identities for both objects and subjects under consideration, and given the relationship between representation and action noted above, such identities are taken to be advanced in unison with suggestions for particular governance arrangements. The next chapter considers discourse analytical tools further, but the value of analysing representations is that it can elucidate contestation behind the dominant

representations of REDD+, thereby showing how those that may appear suitable and self-evident are dependent on the obscuring of other representations.

A discourse analysis can thus be fitted within an ANT framework and the two approaches can function in a complementary manner. REDD+ negotiations are at times very technical, but they are also highly politicised with considerable socioeconomic stakes. Technical agenda items can be considered from an ANT perspective where the main benefit is to empirically trace the formation of objects through the agencies of negotiating actors, inscription devices, and the material objects being discussed. Other agenda items, such as, for example, drivers of deforestation, can be analysed through discourse analytical tools to elicit the contestation behind dominant representations. The argument, then, is that ANT and discourse analyses can be used together within a governmentality analysis and the logic of separation between the two theoretical traditions should be related to the availability of inscription devices that facilitate a tracing of within-network agency. The concluding section that follows summarises this analytical framework developed throughout the chapter.

2.3 Conclusion: Integrating discourse analysis and ANT to operationalise a governmentality framework

This chapter has argued that to understand how REDD+ is rendered governable, one is urged to look beyond the immediate context of those actions undertaken by nation states. States are conditioned by available forms of knowledge and this means that a shift must be undertaken to also consider that knowledge itself. Approaches that consider the political and/or strategic use of knowledge, such as Haas' epistemic communities and Gramscian international political economy approaches, were discussed but considered less suitable than a governmentality

approach to analyse knowledge politics during the REDD+ negotiations. A governmentality approach assumes that inscription devices, termed technologies in governmentality scholarship, undertake the dual function of conducting practical forms of governance on the one hand, and on the other inscribe objects and subjects in conceptual forms, representations, based on which governance agendas, termed rationalities, are further developed. It is based on such ideas that governmentality scholars study both representations and practical aspects of governance. Both venues are important for an understanding of how governance initiatives are developed and operate. However, an empirical limitation was noted for the governmentality research that has been undertaken on climate issues. By focusing on how governance is practically undertaken, contesting ambitions and heterogeneity in the development of the rationalities and representations that influence governance initiatives have not been considered at length, and this may produce analytical outputs in which the instruments that govern the climate appear unchallenged. To address this limitation, a direct focus on the REDD+ negotiations was suggested, but since governmentality theory is seldom applied to negotiations, discourse analysis and ANT were considered necessary complements.

Discourse analysis proposes the same relationship between representation and action as governmentality theory, but is most often confined to consider ideational aspects, which makes it less suited to study inscription devices. However, it can be used to elucidate dominant representations and analyse the contested foundation they are built on, thereby illustrating what forms of knowledge are subjugated throughout the negotiations. It is therefore useful in showing that the development of the representations and knowledge constituting rationalities is far from a linear and uncontested process. ANT is, however, a necessary complement. An ANT analysis also produces analytical outputs in which representations are produced through contested process. However, ANT allows for an understanding of how negotiators start their deliberation

with a set of representations that are provided by inscription devices. When such devices are readily available, the impact that non-humans are perceived to have in the sense of favouring certain outcomes at the expense of others can be traced. ANT therefore enables an understanding of how non-humans partake in the negotiators ambition to render REDD+ governable.

Through the analytical framework proposed here, the REDD+ rationality will be seen as developed through a contingent and contested process that includes both representational struggles and non-humans that through their within-network agency favour certain decisions while discouraging others. The combination of discourse analysis and ANT therefore addresses the empirical limitations of certain governmentality scholarship and caters for an analysis of how REDD+ is rendered governable through the UNFCCC negotiations. This analytical framework is further elaborated in the next chapter that begins with a construction of a research design.

Chapter 3

RESEARCH DESIGN AND METHODS

The previous chapter integrated ANT and discourse analysis in an analytical framework to operationalise a governmentality analysis of the REDD+ negotiations. The task of this chapter is to specify in more detail how that framework was used to analyse the negotiations, and this will be undertaken in two steps. The first step is to elaborate a research design and the second to detail a set of research methods for data collection and analysis.

Elaborating a research design amounts in this case to clarify on what parts of the negotiations that ANT and discourse analysis were applied respectively, and how they together addressed the research questions posed. This is done by appropriating the ‘regime of practice’ concept introduced in the first chapter, and split the analysis according to the different dimensions of this regime. The design section also contextualises the different UNFCCC bodies in which REDD+ is negotiated, and the rules of procedure of the negotiations. This is necessary in particular for the ANT analysis as it traced the formation of negotiation outcomes adopted in several negotiation bodies governed by formal rules of procedure.

A section follows that describe research methods. The methods used to collect data were the same for both the ANT analysis and the discourse analysis. The data primarily consists of a large corpus of official documents pertaining to the negotiations as well as interviews with Parties and non-state actors partaking in the negotiations as observers. The methods used to analyse the data did, however, differ between the ANT analysis and the discourse analysis. The former was facilitated by what is termed impressionist object tracing and the latter by a set of discourse analytical tools. A final section discusses research limits and reflexivity, and develops the argument that research should be understood as a form of politics.

3.1 Research design

This section develops a research design specifying on what parts of the negotiations that ANT and discourse analysis were applied respectively. In doing so, this section borrows from Dean (1999) who developed a research heuristic for governmentality analyses. Dean terms it an ‘analytics of government’, and it is suitable for analyses of regimes of practices, denoting the ensemble of ideas and practices directed towards addressing particular issues or fulfilling certain needs. For REDD+, the regime includes the rationality with its representations, but also the multi-layered governance initiatives that govern REDD+ in practice. This study analysed the rationality and representations, and while it did not analyse governance in practice, it analysed the authoritative guidelines describing how monitoring systems should be instituted to render carbon tradable. The analysis was confined to the UNFCCC negotiations, but it is directly relevant for how the regime will be constituted in practice. It did therefore not address the question of how REDD+ governs, but rather how REDD+ is rendered governable. In other words, the analysis addressed the main research question of the thesis:

- *How is REDD+ rendered governable through the UNFCCC negotiations?*

As detailed in the introductory chapter, the research heuristic splits up a regime of practice into four different dimensions, and they correspond to the three analytical focal points introduced in the same chapter (one focal point covers two dimensions). This section divides the analysis of the dimensions according to discourse analysis and ANT, and argues that ANT was only suited for an analysis of one of the dimensions. The first dimension is ‘rationalities’,

which were theorised in the previous chapter. It has been suggested that the REDD+ rationality resonates with sustainable development and the idea that economic growth can be attained while ensuring ecological sustainability. To achieve this, carbon markets have been proposed to provide emission reductions that are cost-effective. Those are some of the most fundamental ideas that have legitimised the consideration of REDD+ by negotiators. One of the aims of this thesis was to flesh out this rationality more concretely, but also to analyse how it has been contested throughout the negotiations. This was an analytical interest because it elucidates both what forms of criticism have been validated and allowed to influence the development of REDD+, as well as what suggestions have been subjugated, thereby showing the contested foundation the rationality is built on. Such contestation and critique were suitably analysed through discourse analysis since, as the previous chapter argued, discourse analysis has a range of tools to articulate such contestation. More importantly, contestation was most often not advanced on the basis of clearly defined inscription devices, making an ANT analysis with its attentiveness to empirical tracing untenable. This analytical focal point corresponds to the following research question:

- *What is the rationality of REDD+ and how has it been contested throughout the negotiations?*

Another dimension is ‘fields of visibility’, which concern the representations of those objects and subjects governed in REDD+. The previous chapter suggested that such subjects and objects are inscribed in various ways that suggest suitable ways for how they can be governed. This field does not inscribe all objects and subjects of the world. The field can rather be understood as a discourse that is structured by, while also influencing, the rationality and its

associated technologies. Stephan (2013: 19), for example, argues that the field of visibility of REDD+ is 'very constrained and focused on carbon'. REDD+ creates tradable assets based on carbon, which means that carbon is centred in the field while other aspects such as species richness, i.e. biodiversity, may not be articulated as prominently, which in turn may have practical consequences for how governance is undertaken. However, of primary interest here is what subjects are rendered responsible for deforestation in the field of visibility. As mentioned in the introductory chapter, REDD+ seeks to incentivise forest users to conserve forests since they are assumed to drive deforestation, but forest users is an undifferentiated category and it is anticipated that there may be contestation regarding what type of drivers are articulated as well as subjugated through the negotiations.

This dimension is intimately linked with another dimension, which is 'forms of subjectivity'. It was argued in the previous chapter, with recourse to Stephan (2013: 18), that rationalities and technologies both 'form and presuppose particular identities' or subjectivities. Stephan also argues that payment for ecosystem services (PES) schemes, which is how REDD+ will most likely function, presuppose subjects behaving like the utility-maximising actors of neo-classical economic theory. Governmentality theory assumes that all governance initiatives presuppose particular subjectivities and while this can be considered a mundane point, it is often combined with the Foucauldian insight that subjects can be moulded through governance initiatives. It is assumed that a person's identity and habits can alter through sustained interaction, which would suggest that through PES schemes, subjects may over the years alter their attitudes and incentive systems regarding how and why forests should be conserved (e.g. Vatn, 2010). How this plays out in practice was not directly analysed in this thesis, but the Foucauldian insight makes an analysis of presupposed subjectivities important. The dominant subjectivity of REDD+ was therefore analysed, which was assumed to be closely related to the

‘PES subject’, but also challenges to this subjectivity and the impact those challenges had. These two dimensions were also analysed through discourse analysis, both because drivers and subjectivities were not advanced on the basis of clearly defined inscription devices, and because discourse analysis is equipped with tools specifically addressing such presupposed subjectivities; those are detailed later in this chapter. The two dimensions correspond to one research question, which is:

- *Who are represented as drivers through the negotiations and how will they be governed?*

The final dimension is ‘technologies’. Technologies facilitate governance. They are part of the sociotechnical infrastructure that governs the climate in practice. An example here would be satellites that are often used as part of monitoring systems to measure forest conservation. These measurements can be combined with other inscriptions to transform conservation progress into more manageable carbon quantities, which means that forests are represented in conceptual forms that may influence discussions on how they can be governed in novel ways. Technologies are thus part of governing, but they also manage ‘information feedback’ through which deliberations that influence rationalities are facilitated. This latter aspect is the interest of this study. Negotiators undertake technical deliberations based on such information feedback to construct guidelines that countries must abide to when implementing their forest monitoring systems. As the previous chapter stated, when such information feedback is readily available, ANT can be used to trace network constellations supporting or discouraging negotiation outcomes. Such outcomes in turn construct a representation specifying what parts of forests should be monitored in REDD+. This dimension corresponds to the third analytical focal point

set out in the introductory chapter. It was analysed based on ANT and it addressed to the following research question:

- *How is REDD+ carbon rendered tradable through the negotiations?*

To summarise, ANT was used to analyse one of the four dimensions constituting the regime of practice, whereas discourse analysis was used for the other three dimensions. Having divided the analysis of the focal points according to ANT and discourse analysis, the next section considers the institutional and practical setting of the negotiations, because such factors influence how negotiations are undertaken and outcomes adopted.

3.2 REDD+ negotiating bodies and rules of procedure

The UNFCCC is based on a ‘framework to protocol’ structure meaning ‘that general principles are proposed in a framework to be specified later in protocols’ (Friman, 2013: 10). Parties to the Convention may choose to also become Parties to protocols. For instance, the USA is Party to the framework, but not to the only existing protocol, the Kyoto Protocol. By Parties, nation states are almost exclusively designated, aside from regional economic integration organisations such as the EU that can also become Parties. For purposes of ratification, however, regional organisations are not counted as additional to those ratifications deposited by member states of that organisation, and by 2014, 196 Parties had ratified the UNFCCC (UNFCCC, 2014h) Inter- and non-governmental organisations can be accepted as admitted observers to the Convention, which allows them to partake in the negotiations with observer capacity and submit their views on certain issues being negotiated under the Convention should

negotiating Parties invite such input. The Convention was in 2014 specified to have ‘over’ 1598 admitted NGO observers and 99 IGO observers (UNFCCC, 2014g).

Negotiations under the UNFCCC are undertaken in a set of negotiation bodies. The principal body of the Convention is the Conference of the Parties (COP), which is

the supreme decision-making body of the Convention. All States that are Parties to the Convention are represented at the COP, at which they review the implementation of the Convention and any other legal instruments that the COP adopts and take decisions necessary to promote the effective implementation of the Convention, including institutional and administrative arrangements. (UNFCCC, 2013a)

The COP meets annually and undertakes the formal decision-making under the Convention. This is therefore the body under which a possible new legal instrument will be adopted that may include REDD+. As pertaining to fine-grained policy development and the negotiation of REDD+ components, however, much work is undertaken in other bodies of the Convention, and the Subsidiary Body for Scientific and Technological Advice (SBSTA) is one of the primary venues in this regard. The SBSTA is one of two permanent bodies to the Convention and it ‘supports the work of the COP ... through the provision of timely information and advice on scientific and technological matters as they relate to the Convention or its Kyoto Protocol’ (UNFCCC, 2013f). Further,

the SBSTA plays an important role as the link between the scientific information provided by expert sources such as the IPCC on the one hand, and the policy-oriented needs of the COP on the other. It works closely with the IPCC ... and also collaborates with other relevant international organizations that share the common objective of sustainable development. (UNFCCC, 2013f)

Given this mandate, in 2005 the COP decided that the SBSTA should ‘review relevant scientific and technical issues and to consider policy approaches and positive incentives for

reducing emissions from deforestation in developing countries’ (Boyd, 2010: 873). The SBSTA is therefore the primary venue in which ostensibly technical aspects of REDD+ are negotiated, and where decisions are drafted that are subsequently forwarded to the COP for consideration. It convenes twice a year, one of the occasions being in close proximity to the COP, with a broad mix of attendees including observers from inter- and non-governmental organisations, and representatives from Parties to the Convention. Parties can also, on an ad-hoc basis, request expert meetings and workshops on selected technical issues that, in addition to normal SBSTA attendees, may include a specialised audience with expertise in the matter under consideration. Parties often submit their views on the topics of negotiation prior to the sessions, and they can also invite inter- and non-governmental organisations to do so. Such views, or ‘negotiation positions’, form a large part of the empirical material used in this study.

The other permanent body of the Convention is the Subsidiary Body for Implementation (SBI) and as the title alludes to, this body assesses and reviews how the Convention and its Kyoto Protocol is implemented (UNFCCC, 2014i). This body has not considered REDD+ as much as the SBSTA, but has since 2012 shared the responsibility with the SBSTA of certain aspects of REDD+, including institutional arrangements to coordinate support for REDD+ implementation (UNFCCC, 2014a). This body does not form a major part of the analysis in forthcoming chapters.

A more important venue for this study is the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA). This is not a permanent body of the Convention like the SBSTA or the SBI. Rather, it is a dismantled subsidiary body of the Convention that was in operation from 2007 to 2012. It was instituted as a response to the Bali Action Plan, named after a COP meeting in Bali, to negotiate a climate agreement to be completed by 2009 in Copenhagen, but given the inability to reach agreed outcomes, its

mandate was eventually extended to 2012. Negotiations were conducted on REDD+, but also other agenda items related to mitigation, adaptation, technology and financing. The AWG-LCA negotiations were more rapid than those of the SBSTA because Parties sought to establish a new comprehensive agreement in Copenhagen, and it was less technical as the SBSTA mostly covered such aspects. For REDD+, some of the topics included how to finance forest conservation, but also a set of ‘safeguards’ to protect biodiversity and forest users. The AWG-LCA can thus be understood as the more ‘political’ negotiation body, whereas the SBSTA is the venue where less high-profile and more technical matters are settled. Parties, and sometimes non-state actors, also submitted their views on the topics of negotiation for this body.

The AWG-LCA closed in 2012 with a range of outcomes, including some pertaining to REDD+. However, before the AWG-LCA closed, the Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP) opened to negotiate a new legal instrument for the year 2020 when the Kyoto Protocol is set to terminate. The negotiations are set to finish by late 2015, and as of mid-2015, several options for REDD+ are part of the draft negotiation text (UNFCCC, 2015d: para. 23). Given that many negotiation outcomes already have been adopted for REDD+ in the AWG-LCA and the SBSTA (e.g. UNFCCC, 2014j), this body does not form a major part of the analysis in forthcoming chapters.

It is not only Parties and non-state actors that write textual input before negotiation sessions. Rather, the Secretariat of the UNFCCC can provide input in the form of reports and other documents to all the described negotiation bodies. The Secretariat is a supporting body mandated by the Convention to provide ‘organisational support and technical expertise to the UNFCCC negotiations and institutions’, and can, for example, be tasked to provide input in terms of technical papers to facilitate discussions when considered necessary by Parties (UNFCCC, 2013d). The Secretariat has some 470 employees, should act as an ‘impartial body

of civil servants', and has a branch concerned with finance, technology and capacity building to support the negotiating bodies of the Convention (UNFCCC, 2013e).

During negotiations, the formal bodies all have plenary meetings in which agendas for the items to consider are agreed upon. However, much of the actual negotiations are often relegated to either informal groups or informal consultations since such 'negotiations are more flexible as they lack rules for how they should be conducted' (Friman, 2013: 11). Formal bodies such as the SBSTA can decide to relegate items to informal groups that are open-ended, which means that all Parties can participate. Such groups are sometimes open for observer organisations, but closed meetings are also common. However, briefings are often held with observer organisations after meetings have taken place. Informal consultations 'are held to build consensus on technical matters or on matters of limited concern, which do not need the open-ended character of an informal group for their resolution' (Friman, 2013: 11). These consultations are not open for observer organisations.

If these groups lack rules for how negotiations should be conducted, the same is also true for matters of the formal bodies since the draft rules of procedure, based on standard United Nations negotiating rules, could not be agreed by the COP when it first convened in 1995 (Friman, 2013). A consequence is that, with few exceptions,⁹ decisions are adopted through consensus rather than, for example, majority voting. In giving 'close to veto rights to all Parties to the UNFCCC, conflict ... must be dealt with according to astute rationales to enable agreement by consensus' (ibid: 45). In other words, the deliberations are conducted taking into account that consensus rather than a majority is needed to reach agreed outcomes. Negotiations on REDD+ have most often resulted in a consensus, whereby REDD+ can be said to unfold in a much smoother and non-contentious fashion compared to the overall UNFCCC negotiations.

⁹ See Friman (2013) for exceptions.

As mentioned, an agreement relevant to REDD+ is to be expected in late 2015 the earliest. Until then, negotiating bodies can produce conclusions that ‘have less legal significance and are usually procedural in nature’ (ibid: 49). However, when conclusions are adopted as decisions by the COP, they ‘offer political guidance’, and if ‘written in mandatory language, they have more legal relevance’ (ibid: 49). The next section specifies in more detail the different types of documents that have been indicated in this section, since they were the primary data source for the analysis in the following chapters.

3.3 Research methods

Research methods comprise both data collection and analysis, and this section describes data collection methods. Writing for an audience of researchers, Latour (2005: 133, emphasis in original) is of the opinion that ‘*everything is data*: everything from the first telephone call to a prospective interviewee, the first appointment with the advisor, the first corrections made by a client on a grant proposal, the first launching of a search engine’. When undertaking the empirical tracing that Latour advocates, where translations occur between both humans and non-humans not confined to any juridical boundaries, such as the UNFCCC negotiations, potential data sources and collection methods may appear endless. Consequently, all research is always partial, and the task is to explain why some collection methods and data sources were preferred over others. Methods for collecting data are therefore described alongside a discussion of why those methods were suitable to address the research questions. As previously stated, the same data was used for both the ANT analysis and the discourse analysis. However, when describing the range of methods used, slightly different motivations are presented for how the data facilitated the respective analyses.

The following data sources were used:

- 243 documents in the form of formal submissions by representatives from Parties, IGOs and NGOs, as well as other UNFCCC documents pertaining to the REDD+ negotiations from 2005 to mid-2015.
- 24 interviews with representatives from Parties and non-governmental organisations that have made formal submissions to the UNFCCC on REDD+.
- Observations from two UNFCCC negotiation sessions.

As further explained below, the UNFCCC documents are the primary data source, interviews the secondary, and observations the tertiary.

3.3.1 UNFCCC documents

As elaborated in the previous chapter, the dominant data source for discourse analysis is language, either written in texts or spoken by subjects, which is why a focus on texts does not in itself need further qualification. However, having written texts in the form of UNFCCC documents rather than interview data as the primary data source was considered suitable because the large amount of available data was well suited to address the research aims of the study. As substantiated below, most negotiations start on the basis of negotiation positions submitted by both state and non-state actors, in which their preferences are clearly stated. Moreover, documents are produced in negotiation sessions and progress made as well as adopted outcomes can be closely tracked through them. Submissions by Parties and non-state actors do not contain particular rules for how they should be written, which often has the consequence that authors extensively argue for the suitability of their proposals. The documents

therefore contain detailed accounts of how the authors wish to have REDD+ constructed, and at times also accounts of what they think is wrong with how it is currently being constructed. These two dimensions provide substantial input to the various analytical categories presented above in the form of dominant representations and critiques of such representations, and the documents produced in negotiation sessions indicate in what ways the critique has been able to influence negotiation outcomes.

A focus on documents when undertaking empirical tracing of how negotiation outcomes are formed by both humans and non-humans can be considered more contentious. While ANT research has been undertaken through a sole focus on texts (e.g. Nimmo, 2011, Cuckston, 2014), influential proponents of ANT, such as Mol (2002a), Law (2004) and Latour (2005), prefer more practice oriented approaches. The argument, in short, is that by studying practices as opposed to texts, one allows for the agency of non-humans to take a more central position, because the analysis can start from a broader scope than language when tracing how objects such as negotiation outcomes are formed. Little wonder, then, that Nimmo (2011: 113) is worried that

[w]ith texts it seems the heterogeneous practice is always already absent, and we are left only with traces distilled into symbols and abstracted from the rich and multiple worlds in which they emerged...

Networks, the empirical traces followed by the researcher, are seldom confined to papers and symbols, or to juridical boundaries such as those of the UNFCCC, and the translations leading up to negotiation outcomes on REDD+ could, for example, be traced to research institutes developing forest carbon measurement techniques; to the testing of such techniques; and to the various channels that provide such data to negotiators. However, as Latour (2005) argues, description can never be complete; a 'cut' has to be made somewhere. This cut is made

at the juridical boundaries of the UNFCCC for the reason that the research objectives of this study are to understand how REDD+ is rendered governable through the negotiation process, and ANT is used to show how non-humans are constituent parts in this process.

When such a cut is made, the argument for focusing on texts is stronger because a very large part of the negotiations that consider how inscription devices are able to register parts of forests, and how such considerations are related to suggestions for negotiation outcomes, are recorded in texts. For example, before arriving to the negotiation table, Parties and non-state actors often specify in submissions how they understand the ability of inscription devices to register various activities in forests, such as estimations of forest degradation, and how such devices should enable or disable certain policy options. They also often discuss these matters in workshops and expert meetings, and the reports of those meetings recount how negotiators evaluated the capacities of inscription devices. They thereafter negotiate and while everything that is said and done in those sessions is not recorded in texts, the outcomes are. Those outcomes can in turn be related to the negotiators' understanding of the ability of inscription devices to undertake monitoring operations, as recorded in submissions and reports from both workshops and expert meetings. In other words, the impact of inscription devices as understood by Parties and non-state actors can, to a considerable extent, be empirically traced through texts.

3.3.2 Document sampling range

Documents were sampled from 2005, when REDD+ was first considered, to mid-2015. To have the sampling period end in mid-2015 entails that only the final COP agreement is missing where negotiators may produce a new legal mechanism that potentially includes REDD+. However, decisions have been adopted for most, if not all, analytical focal points specified above (UNFCCC, 2014j). Robust textual data were available for all analytical focal points, but in a

few cases no firm decisions had been adopted. Most evidently, it is as of mid-2015 not clear whether REDD+ will be integrated in carbon market arrangements or not. This has implications for one of the three analytical focal points, and those implications are further discussed in chapter five wherein market contestation is analysed.

There is a diversity of document types that pertain to the negotiations. A range of types are specified in the following because the type of document has great bearing on its content. The largest data source is *submissions from Parties, IGOs and NGOs*. Submissions from Parties and inter-governmental organisations are often compiled by the Secretariat into substantive *miscellaneous documents* for increased manageability. They include identification markers, a unique document label such as ‘FCCC/SBSTA/2012/MISC.1’ that makes them searchable on the webpage of the UNFCCC. The Secretariat does, however, not compile submissions by non-governmental organisations, which is why such documents do not have identification markers. The impetus for these documents is often previous negotiations where it has been considered necessary to invite input on specific topics that are to be negotiated later. The content is structured to respond to the invitation, but they are considered less formal and the syntax of this response can differ widely depending on the organisation or Party in question.

Parties can also request the Secretariat to produce *technical papers* on certain issues. To note the formality of the papers, they have both identification markers and an UNFCCC logotype. They are often expansive and written with a fully referenced academic syntax to aid Parties on technical issues. The Secretariat also writes official reports from workshops and expert meetings. *Information documents* are often, but not always, reports from expert meetings dedicated to specific issues. These meetings are requested by Parties to bring clarity to agenda items when considered necessary. The documents are therefore normally expansive and the

content details discussions from the meetings for reiteration by Party representatives when needed. Information documents have both identification markers and an UNFCCC logotype.

Another type of document is *reports of meetings* and they are often highly structured as they are official reports from negotiations that in a brief and concise manner give an account of all agenda items considered. Since REDD+ is but one agenda item under the COP and other negotiation bodies, reports dedicate at most a handful pages to REDD+. *Conclusions* that are proposed at the end of negotiations in formal bodies such as the AWG-LCA or the SBSTA and forwarded to the COP for final adoption are even briefer. The same is true for *decisions* adopted by the COP. Such texts are highly formalised, approaching the syntax of formal treaty text. All document types in this paragraph contain identification markers and logotypes. Document types as well as numbers analysed are summarised in the table below.

Table 1. Analysed documents¹⁰

Document type	Typical author	Purpose	No. Analysed
Submissions from Parties and non-state actors	Parties or non-state actors; often compiled by the Secretariat in the case of Parties and IGOs	Sets out position of author(s) before negotiations	161
Technical papers	The Secretariat	Provides background information on technical matters to negotiators	6
Information documents	The Secretariat or the Chair of the meeting	Reports from expert meetings	16
Notes, informal overviews, non-papers	The Secretariat or the Chair of the meeting	Workshop reports, texts to facilitate negotiations, or draft negotiation texts	15
Reports of meetings	The Secretariat	Report of progress made and conclusions taken by negotiation bodies	16
Conclusions	Proposed by the Chair, agreed by consensus	Conclusions proposed in negotiation bodies and forwarded to the COP	23
Decisions	Adopted by consensus by the Conference of the Parties	Finalises negotiations of the agenda item	6
			Total: 243

¹⁰ It should be noted that there can be deviations from these categories. For example, workshop reports are at times labelled *notes*, and sometimes *information documents*.

The documents were 243 in total and this includes all submissions made to the SBSTA on REDD+, and all submissions made to other negotiation bodies pertaining to the analytical focal points, which was necessary to encompass the contentious process of rendering REDD+ governable. How this rich material was analysed is described in the data analysis section further below. Before that, however, a section follows discussing how selected interviews with state and non-state actors were used to complement this text-based data.

3.3.3 Interviews with Party- and non-state actors

The 24 interviews were secondary to the documents and utilised as a form of corroboration. That is, the interviews verified and qualified the data gathered through documents. However, the rationale for this corroboration differed between the ANT analysis and the discourse analysis. Starting with the latter, it is important to note that knowledge articulated through interviews is co-created between the interviewer and interviewee (Neumann, 2008). An interview with a person representing a Party or non-state actor does often not produce the same knowledge as that which can be attained from official negotiation submissions. Answers to interview questions are affected by the information that brought the persons together, the type of questions posed, and the power relations between the persons based, in unpredictable ways, on categories such as age, gender and profession.

The UNFCCC documents were therefore used to base the analysis, whereas the interviews corroborated and qualified those findings. The politicised context of the negotiations as well as the document type affected the content and syntax of the texts to the extent that neither suggested policy options nor their underlying representations were always clearly articulated. Interviews were therefore useful to probe deeper into how respondents wanted REDD+ to be crafted and what their preferred outcomes meant in terms of critiquing or

affirming the rationality and dominant representations of REDD+. However, interview data never took priority. If differences were evident between text and speech, it prompted further document analysis and a re-evaluation of the findings.

The use of interviews for the ANT analysis had a slightly different motivation. The UNFCCC documents that also were the basis for this analysis were written in a technical language. Topics of interest concerned carbon measurement devices, complex methods to convert deforestation trends to carbon quantities, and other matters that at times were difficult to understand given my background in the social sciences. Such topics, however, were the basis for analysing in what ways Parties, inscription devices and forests affected negotiation outcomes. Interviews with technical experts, from both Party and non-state organisations, were essential in order to corroborate such ideas. As explained below, the procedure when conducting interviews was seldom to outright ask the interviewees direct questions on, for example, whether inscription devices could or could not properly measure forest carbon quantities, because if such a direct interest was shown, it was assumed that vested interests could affect the answers given. It was in other words assumed that interviewees could laboriously critique or affirm certain technical elements to which they had been directed. Rather, general technical questions were asked to generate equally general responses, but given my background in the social sciences and stated ‘moderate’ level of REDD+ knowledge, answers were often given in a language that made it easier to firmly understand in what ways certain Parties or non-humans made certain outcomes more difficult to agree on. Interviews were thus undertaken to corroborate insights gained from the document analysis.

The selection criteria for approaching interviewees differed between non-governmental organisations and Party negotiators. For non-state actors, the criterion was that they had made a submission to either the AWG-LCA or the SBSTA on the topic of REDD+ in 2011 or 2012.

The reason for not extending the selection years to the same as the document sampling range was pragmatic. Given that interviews were conducted as a method to corroborate the main document analysis, a representative sample was not the aim. Rather, a rough twenty interviews were set as a target to corroborate and qualify findings from the document analysis, ten with non-state actors and ten with Party negotiators. It was therefore considered possible to focus on a narrower time frame and recent rather than distant years were chosen given the high labour mobility in the sector.

A sample of 53 organisations was identified in submissions, either with organisation name and contact details to specific persons included, or with organisation name only. In case of the latter, the organisations' websites were consulted to acquire suitable contact details. Emails were sent out to enquire whether they would like to participate in the research project. They were customised to what was considered suitable for the organisation in question. However, the same participant information sheet and consent form were attached to all emails.¹¹ Potential participants were urged to fill in the consent form and return it if they agreed to partake in the study. Fourteen organisations agreed to be interviewed. Of the fourteen, eleven were conducted using either telephone or Skype and three were undertaken in person.

The selection criteria for Parties were different. Since they were high level representatives from nation states, it was assumed that it would be difficult to engage them in telephone or Skype interviews. They were instead asked to partake in interviews during the SBSTA session in Bonn 2013, or the COP in Warsaw later the same year. I attended both sessions as an observer from a non-state organisation, with accreditation from the University of Linköping, Sweden and the University of Leeds, UK. Party negotiators and their technical staff were located through participation lists from workshops and expert meetings under the SBSTA that are

¹¹ Attached in Annex 1 and 2

available on the UNFCCC webpage (see e.g. UNFCCC, 2011a). A total of fifty emails were sent out to personal email addresses with participant information sheets attached. Roughly one fifth were willing to be interviewed but generally stated that their schedule during negotiations were overburdened and asked to be contacted again during the conference. At the conference many declined but those who responded positively suggested further potential candidates to interview; in other words, a method of snowballing was used. Ten Party negotiators were interviewed with consent forms signed.

The participant information sheet explained the research project in general terms to both state and non-state actors. That is, the information corresponded to the stated research questions, but was posed in a less academic language. When discussing further with interviewees, it was explained that the research project was focused on building an overview of the various policy options that had been advanced on different agenda items pertaining to REDD+; which of those policy options had been accepted as well as rejected; and the reasons why such decisions had been taken. Based on this introduction, they were asked to explain the work they do on REDD+, elaborate on how they think REDD+ should be developed, and how that relates to the way it is currently being developed. They were finally asked to respond to any of the questions in the participation information sheet they were comfortable discussing. This structure, which corresponds to *semi-structured interviews* (Kvale, 2007), was accompanied by a description of my own background in the social sciences.

This structure was used for several reasons. Their idea of how REDD+ should be developed compared to how it was being developed at the UNFCCC was key to elicit areas of contention. My background in the social sciences and ‘moderate’ knowledge of REDD+ was specified to have interviewees adapt their vocabulary and explain contentious technical issues in an articulate and easy-to-follow manner. The set of questions covered all topics of interest,

from those that can be considered technical to those concerning carbon markets and biodiversity, and this was important given the broad span of the research questions. The questions sought to enable participants to critically discuss REDD+ without being directed towards specific issues. In other words, this structure was used to allow respondents to discuss all those issues that corresponded to the research interest of the thesis, but in a way where they were not asked to pay particular attention to anyone of these.

Both state and non-state actors had the possibility to be anonymous. Most state actors preferred anonymity while most non-state actors agreed to have their names used in the thesis. A decision was, however, taken to present all data from interviewees anonymously, aside from indicating whether it was a Party negotiator or a non-state representative. This approach was chosen because most data presented in the analysis is drawn from the documents with relatively few interview quotes, entailing that a balanced picture of the respondents' views on REDD+ was difficult to convey. Moreover, interview data was not gathered through methods seeking representative samples since the data was used to corroborate UNFCCC documents, and the authors of the documents are disclosed in the analysis. The table below lists the date of the interviews and divides them according to Party and NGO affiliation.

Interviews were recorded and transcribed.¹² The data as well as the consent forms are securely stored according to standards considered suitable by the Humanities & Social Sciences Ethical Review Committee of the University of Birmingham.

¹² Transcripts are, however, not attached to this thesis. This is because they would jeopardise the anonymity of several respondents.

Table 2. List of interviews

Party interviews	NGO interviews	NGO interviews (cont.)
1: 31 May 2013	1: 15 February 2013	11: 3 April 2013
2: 6 June 2013	2: 18 February 2013	12: 11 April 2013
3: 6 June 2013	3: 19 February 2013	13: 13 June 2013
4: 8 June 2013	4: 26 February 2013	14: 19 November 2013
5: 10 June 2013	5: 1 March 2013	
6: 10 June 2013	6: 6 March 2013	
7: 13 June 2013	7: 6 March 2013	
8: 12 November 2013	8: 7 March 2013	
9: 13 November 2013	9: 8 March 2013	
10: 15 November 2013	10: 21 March 2013	

3.3.4 Observations from two UNFCCC negotiation events

The data acquired from observing the negotiations carried less significance than the UNFCCC documents and interviews with regards to addressing the analytical focal points. Two negotiation sessions were attended, together comprising four weeks. Aside from being the basis for undertaking Party interviews, attending the negotiations allowed for observations of expert workshops dedicated to REDD+ as well as general negotiations on a range of REDD+ topics. This was helpful as it on a few occasions facilitated an understanding of opinions that would otherwise not have been attained. To explain, Parties and non-state actors advance submissions on topics to be negotiated. Negotiators subsequently deliberate and adopt agreed outcomes that Parties, at least formally, do not object to given the requirement of consensus, but it may be unclear whether the outcomes satisfy non-state actors. Their opinion may furthermore not be ascertainable in future submissions given that those submissions are likely to consider another topic that is yet to be negotiated. Observing the negotiations on a few occasions facilitated an

understanding of non-state actors' views on negotiation outcomes, because they were allowed the floor at the end of certain sessions to state their affirmations or objections to proposed outcomes.

The main relevance of the observations was, however, to listen to the negotiations of technical agenda item. Such items were discussed in a less formal language than in submissions and in a context where their significance for other 'political' topics was illuminated. The observations were thus mainly helpful to build relevant background knowledge of REDD+. Data was gathered by taking notes but since it predominantly concerned the technical infrastructure of the scheme rather than contributing to the analytical focal points, it was not included in the data analysis that is explained in the following.

3.4 Data Analysis

Separate data analyses were undertaken for the ANT-inspired analysis and the discourse analysis. However, the data was categorised and coded in the same manner. No computer software was used to code the data despite the considerable amounts collected, because the UNFCCC webpage collects and systematises all documents pertaining to REDD+ in a relatively accessible manner with clear indications of the agenda item under consideration, document type, and the negotiation session in which they were produced (see e.g. UNFCCC, 2014j). Most texts were thus already coded, and they were subsequently organised chronologically according to the analytical focal points considered in the beginning of this chapter. Manual coding was, however, undertaken on interview transcripts to disaggregate texts into the same analytical focal points. This resulted in texts organised according to the themes of the analytical focal points with clear indications of document type, negotiation session, author and date of production.

3.4.1 Discourse analysis

As indicated in the previous chapter, there are a range of discourse theories and methods for undertaking discourse analysis. This textual analysis of discourse drew on the works of Doty (1993, 1996) and two Foucauldian concepts. The rationality with its associated representations was analysed through three analytical concepts suggested by Doty, and forms of contestation was subsequently analysed through the Foucauldian concepts.

The first of Doty's concepts is *presupposition* and concerns the taken-for-granted background knowledge of statements. Doty (1993: 306) writes that

[e]ven the most straightforward and ostensibly clear statements bring with them all sorts of presuppositions or background knowledge that is taken to be true. In the absence of the 'truth' of the background knowledge and the world it presupposes, the statement would not make sense.

Statements presuppose background knowledge, but this is not an objective knowledge constitutive of all the objects and subjects in the world. Rather, it is a particular knowledge related to the statement, with particular presuppositions 'about the existence of subjects, objects and their relation to one another' (ibid: 306). Equally, this background knowledge subjugates other objects and subjects, or other types of relations between the subjects and objects that are presupposed. For example, a statement indicating that forest users will benefit from REDD+ presupposes a range of conditions in local contexts, including that forest users have clear tenure rights and that power asymmetries, for instance based on class, gender or other hierarchies, do not prevail to distribute benefits unevenly. This concept was instrumental for the analysis, because statements were often technical and related to the construction of various governance arrangements. Analysing presuppositions to such technical statements thus elucidated the

background ‘world’ of the author; it showed the assumptions and ideas that were presupposed with the statement.

The second concept is *predication*. A ‘predicate affirms a quality, attribute, or property of a person or thing’, and ‘attributes attached to subjects are important for constructing identities for those subjects and for telling us what subjects can do’ (ibid: 306). If presuppositions speak about a background world of statements, then predication suggests how the objects and subjects in that world can be qualified. It suggests that statements are based on particular understandings of the qualities and attributes of those subjects and objects. The evident example would be the PES component of REDD+ that first presupposes that those who receive payments are drivers of deforestation, and secondly that they are equipped with behavioural qualities making them respond positively to such monetary incentives. This is a tool of central importance to the analysis because how subjects should be governed is seldom clearly stated. It is instead often presupposed within the various technical suggestions advanced by negotiators.

Doty (1993: 306) explains that ‘presupposition and predication, in addition to constructing subjects and objects, establish various kinds of relationships between subjects and between subjects and objects’, and these relationships form the third concept called *subject position*. Subject positions draw attention to how both subjects and objects are discursively constituted in relation to something else, an ‘other’. A subject’s identity and attributes are thus a function in discourse of its relationship with other subjects and objects. However, such relationships are more complex than simple binaries, such as good/bad or powerful/weak, and Doty suggests subject positions based on complementarity, similarity, identity and opposition. This analytical concept allows for the tracing of discursive relationships underlying representations. A careful application of this concept was used to analyse what types of relationships were embodied in the rationality and its associated representations. For example,

forest users may be positioned as good forest stewards whereas commercial plantation owners are positioned as irresponsible; or alternatively, forest users may be positioned as poor forest stewards and the state or the REDD+ mechanism as guardians of forests. Such subject positions are important because they may legitimise particular governance arrangements.

These three analytical concepts were employed to analyse the rationality and dominant representations of REDD+. However, the analysis also considered how they were challenged throughout the negotiations, and this was categorised by drawing on two concepts used by Foucault. The first concept is *politicisation*, which is borrowed from Foucault (2007: 390) and his argument that ‘everything can be politicised ... Politics is no more or less than that which is born with resistance to governmentality, the first uprising, the first confrontation’. The concept was used broadly to designate types of critique that accepted how the rationality frames the problem of deforestation and seeks to address it, but still sought to open up aspects of the rationality for political debate.

Many actors implicated in the negotiations critiqued REDD+ for not being able to offer what was promised. For example, they critiqued carbon markets on the basis that they could create winners and losers, and sought to institute fund-based arrangements to supplant markets. Others were concerned that forest users may not directly benefit from REDD+ due to, for example, unclear tenure rights, and sought to institute a range of policies to protect them when subjected to REDD+ governance. These examples are different types of challenges questioning the legitimising ideas of the rationality that were based on the concept of sustainable development, and which proclaimed both economic and social benefits. Such proclaimed outcomes were opened up for political debate and various solutions were proposed to guarantee that the outcomes will materialise. In other words, the ‘framing’ of the rationality was accepted and found desirable, at least for the sake of the argument, but faults were found within it. This

prompted the suggestion of a variety of policy proposals to ensure that the rationality lives up to its promise.

Other challenges are categorised by the concept *counter-conduct*, which has been popularised by Death (2010) through his analytics of social movements and protest, and which can be understood as a ‘struggle against the processes implemented for conducting others’ (Foucault, 2007: 201). It is a concept that does not suggest a complete rejection of governance, but rather an ambition ‘not to be governed *like that*, by that, in the name of those principles, with such and such an objective in mind and by means of such procedures’ (Foucault in Death, 2010: 240, emphasis in original). Death (2010: 240, emphasis in original) argues that ‘a counter-conducts approach looks *within* government to see how forms of resistance rely upon, and are even implicated within, the strategies, techniques and power relations they oppose’. Death deploys the concept to analyse protests by closely following Dean’s (1999) ‘analytics of government’ research heuristic, which is a more ambitious use of the concept than the present study.

The concept is used here to denote forms of resistance working within the rationality and dominant representations of REDD+, but which seeks to subvert them and facilitate governance according to different principles and procedures, and conducted towards different actors. For example, some actors rejected markets, not because they could create winners and losers, but because market-based governance presupposes a market valuation of ecosystems and this was against the principles of how they wanted to be governed. Others argued that it was unjust to govern subsistence forest users irrespective of whether it is effective or not, because commercial actors and consumers residing in other countries bear the main historical responsibility for deforestation. Counter-conduct is thus used to denote resistance seeking to subvert the

rationality and its dominant representations irrespective of whether it can live up to its promise or not.

Counter-conduct can of course also be understood as a politicisation, since it also opens up aspects of REDD+ for political debate. However, reserving it for those critiques that subvert the rationality and dominant representations of REDD+ facilitates a useful separation of the manifold challenges launched towards the scheme throughout the negotiations. As the analysis indicates in later chapter, however, it was not always easy to partition the challenges according to these two categories. The concepts should thus not be understood as creating rigid boundaries between forms of critique accepting and rejecting the framing of the rationality. Rather, they should be understood as categorisation tools that were helpful in navigating the critique and elucidate what forms were able to influence negotiation outcomes as well as what forms were subjugated.

Taken together, the five concepts were used to analyse the rationality and how the subjects and objects governed through REDD+ were represented. By focusing analysis on the three discourse analytical concepts, the rationality and dominant representations that may appear 'reasonable and probably quite unremarkable' (Doty, 1993: 308), were shown to depend on particular background knowledge (while subjugating other types of knowledge); particular qualities and attributes attached to the objects and subjects being governed (while subjugating other qualities and attributes); and to result in particular power relations where some subjects are empowered and others disempowered. The two concepts derived from Foucault thereafter exposed what forms of critique were able to challenge REDD+ and influence negotiation outcomes, and thus also whether those outcomes altered the rationality and dominant representations of REDD+.

3.4.2 Actor-network theory and impressionist object tracing

Hansen (2006: 1), a proponent of discourse analysis, argues that '[w]ithout theory there is nothing but description', whereas Latour (2005: 137) suggests that using theories is like 'taking a free ride', which is far less challenging and rewarding than conducting rigorous descriptive research. In other words, discourse analysis and ANT belong to different analytical traditions with clear tensions. The former takes statements and abstracts from them to elucidate representations, whereas the latter seeks to empirically trace how the statement came to be while avoiding any abstraction in this process. As such, the two analyses were not combined. They were instead differentiated according to the analytical focal points stated at the beginning of the chapter. As also stated, however, insights from both analyses together addressed the main research question.

ANT's affinity for empirical tracing of networks has been explained, and a focus on texts has been argued to be suitable given the stated research aims. Continuing from such arguments, this section follows Cuckston (2014), who argues that one way to do ANT-based empirical tracing through texts is to undertake an impressionist ethnography. However, given that ethnography is a rich tradition laden with meaning, the term 'object tracing' is preferred, and objects refer in this case to negotiation outcomes. The starting point of undertaking impressionist object tracing is to describe the culture of the actors being researched, and "[c]ulture" simply refers to the meanings and practices produced, sustained, and altered through interaction' (Van Maanen, 2011: 155). Cuckston (2014: 35-36) argues that one should describe those things that are considered self-evident 'and render them strange', as this allows the 'ANT researcher ... [to] extract an account of how those things came to be, and continue to be, accepted'. The 'things' are the negotiation outcomes and they 'came to be' through interactions between Parties, inscription devices and forests themselves, as elaborated above.

Impressionist object tracing was suitable here as it seeks to ‘represent specific fragments of cultural knowledge’ and elucidate ‘forms of life by describing specific actions that constitute them at particular instances in time and space’ (ibid: 37). The things or forms of life being described are thus the negotiation outcomes, and the actions constituting them are the translations that occur between the suggested interactions. Describing this process may work to render negotiation outcomes ‘strange’, since instead of being thought of as solely agreed by deliberating Parties, they are formed through a complex set of interactions.

However, the actions constituting outcomes do not only occur at particular instances in time and space, but also within particular network constellations that are constituted by humans and non-humans supporting particular outcomes. Within network constellations, ANT suggests that the actions of humans, but also non-human actors, should be traced. Negotiating Parties always define these constellations and they do so by seeking to enrol other Parties to support certain policy options. When doing so, they are aided by inscription devices that represent forests in ways that facilitate arguments regarding the validity of proposed policy options. Other Parties can either give their support, refuse to enrol, or seek to switch network constellation by suggesting other policy options, often by pointing to other inscription devices. Within these various constellations, inscription devices and the forests they are conceptualising are also perceived to support or discourage policy options. Undertaking impressionist object tracing was, in other words, used to describe how the ‘forms of life’ of negotiation outcomes came to be by tracing actions within particular bounded network constellations in which non-humans have a situated agency.

Within this structured frame, impressionist object tracing is done by seeking to hold back on interpretation and ‘sticking to the story’ (Van Maanen, 2011: 103). That is, no theoretical ideas, such as the discursive concepts elaborated above, are placed upon the story and this is

‘consistent with the principles of ANT research’ (Cuckston, 2014: 37) in following empirical traces. However, this tracing has its limitations. Cuckston (2014: 38) argues that ‘a researcher can only hope to provide an account of their own impression of some small part of this large and complicated culture’. The tracing was affected by the positionality of me as a researcher, a concept discussed further in the next section, which has the consequence that the trace should be understood as an impression rather than an objective and replicable trace. The small part of the described culture was furthermore ‘cut out’ according to the juridical boundaries of the UNFCCC and the impression was granted mainly through texts.

However, these limitations are permissible. The documents are, as argued above, a suitable empirical source to facilitate the tracing. Moreover, the tracing was undertaken to analyse how non-humans were perceived to favour certain policy options while resisting others, and how this was part of a negotiation process resulting in a range of exclusions and simplifications. The ambition of the analysis was to open up the ‘black box’ of the negotiation process with its articulations of uncertainty and resulting simplifications and exclusions, and not to ascertain the ‘true’ agency of non-humans. The described methodology facilitated an impression of this negotiation process, which means that the stated ambition was achievable despite the discussed limitations.

The analysed negotiation process resulted in a range of outcomes that together constructed a representation of forests specifying what parts of forests are included in REDD+ governance initiatives. It instructs the practical technologies that later monitor forest conservation and transform that data into carbon quantities. It is one step in pacifying the natural objects of forests into carbon with fixed qualities (Çalışkan and Callon, 2010). The next chapter gives a descriptive account of how forest monitoring is undertaken to pave the way for this ANT inspired analysis, but a section considering research limits and reflexivity follows below.

3.5 Research limits and reflexivity

The limits of this research have been discussed with regards to the ANT informed analysis. Similar empirical limits are not relevant for discourse analysis as one does not have to follow an empirical trace through texts and other type of materials. Rather, a given empirical sample can be acquired and analysis undertaken on that sample. What is important is that the sample is suitable in order to answer the research questions, and in this case the submissions, outcomes and other documents were appropriate given that they contain all textual UNFCCC information on the specified analytical focal points. Contestation regarding the rationality and its dominant representations was suitably analysed through that empirical sample. Another, and more critical, limitation arises from the interpretive, rather than positivist, research design. This has the consequence that the study was not concerned with testing hypotheses; that it did not seek to enable replicability; and that it did not aspire to firmly state the causal events responsible for certain outcomes within the negotiations. The ANT analysis traced how negotiation outcomes were formed, which indicates a causal tracing, but those traces were impressions based on the positionality of me as a researcher rather than objective traces. This research project instead sought to be open about both positionality and performativity, which is one way to be reflexive. These three terms are unpacked and discussed in the following.

Above, with recourse to Doty, it was made clear that any statement is always based on presuppositions, a set of background ‘truths’. Written texts are always based on meanings that are not always acknowledged. Subscribing to such an idea entails that researchers also have their presuppositions, or their *positionality*. Being *reflexive* means trying to acknowledge this positionality, which is a way of writing the researcher ‘back in’ (Wilkinson, 2013), in order to

reflect on and expound one's unquestioned assumptions (Salter, 2013). Reflexivity is thus necessary when devising the research design, and when undertaking data collection and analysis, because background assumptions guide choices made throughout the research project. However, and importantly, being reflexive does not produce research that is more objective or less positioned according to presuppositions. Just like discourse analysis always can be undertaken on any form of text, the researcher can never produce a text that is not positioned according to certain discourses. To introduce reflexivity in order to entertain positivist notions such as reliability and validity is thus troublesome, as it may convince readers that positionality has been considered to such an extent that the research project is replicable according to astute scientific methods and that the role of the author does not matter.

Research is in addition always *performative*. Latour (2005: 257, emphasis in original) is well aware of this when he cautions that

[t]o 'study' never means offering a disinterested gaze and then being led to action according to the principles discovered by the results of the research. Rather, each discipline is at once *extending* the range of entities at work in the world and actively participating in *transforming* some of them...

Research outputs may transform how the topics under consideration are understood. Phrased differently, and with recourse to the intimate links between representation and action suggested by governmentality scholars, research outputs may add to or alter discursive representations of REDD+. The power of a particular text is often marginal, but it is through discourse that REDD+ is made sense of and therefore also acted upon. In other words, research is a political activity.

Given this inevitability of performativity, and inability of objectivity, a suitable aspiration with reflexivity is to be open about as many choices made as possible, so that readers can

ascertain how this political study came about and was undertaken. In attempting such openness, reflexivity must be discussed from the start of the research project. The political element of this study has been present from the introductory chapter where a range of potential issues with REDD+ were briefly specified. It was, for instance, stated that some studies have questioned whether forest users will benefit from REDD+. The naming of those issues is a political move. It represents REDD+ as potentially having adverse consequences for forest users. While the issues were selected as they had figured widely in critical academic literature, not all Parties negotiating REDD+ may share this understanding. Based on the idea of performativity, it can be said that such a move reinforces those representations. However, instead of naming the issues as ‘real’, they were allowed to function as analytical prisms that structured the analysis.

For example, this thesis does not state whether or not forest users will benefit from REDD+. Rather, it firstly analysed the rationality of REDD+, which embodies the legitimising idea that forest users will be better off. It thereafter investigated whether this was critiqued, the impact this had on negotiation outcomes, and whether those outcomes potentially reshaped the rationality. This may, however, speak about in what ways forest users may or may not benefit, because the analysis elucidated those policy proposals that were accepted as well as subjugated, allowing readers to understand the ‘comparative rigour or strength’ of the outcomes. The political element in this case is thus one of placing focus rather than determining actual impacts.

Reflexivity is also relevant during data collection. It is particularly important to consider positionality when gathering data because the *subject position* of the researcher in interpersonal settings affects ‘one’s access, and the ways that others relate’ (Salter, 2013: 20). Such considerations are not relevant with regards to acquiring texts for analysis. However, and as discussed above, the same is not true for the interviews where several choices were made that affected how data was collected. My background knowledge of REDD+ was specified in the

interview situation, which was one way to influence how interviewees related to me. I attempted to have interviewees adapt their vocabulary and explain technical issues in an easy-to-follow manner. Moreover, the interview questions were phrased in a manner that sought to avoid having respondents elaborate at length to critique or affirm certain issues based on my predetermined issue focus.

The analysis is also performative and the positionality of me as a researcher affected how it was written. Reflexivity was considered in two ways; when choosing particular terms and when interpreting data. With regards to terminology, the discourse analytical concept of predication suggests that all terms are endowed with certain attributes or meanings. For example, Bolivia is highly critical to market-based carbon trading in REDD+ and often referred to forests as 'Mother earth', a living organism that is not up for 'commodification' (UNFCCC, 2012c: 4). The performative aspect here is that if such words were used when writing the analysis, such attributions may be reinforced. As no words are ever neutral, reflexivity was not attempted by choosing those words that had an aura of being neutral. Rather, the rule of thumb was to, when possible, avoid using terms that were implicated in politicised discussions during the negotiations. For example, the opposite of the term 'Mother earth' is perhaps 'carbon stocks', which is a designation of forests as a life-less mechanism regarded for its utility. In this case, I chose to use the term 'forest' since it was not fuelled with explicitly contentious attributes in that particular part of the negotiations.

A final way in which reflexivity was exercised was to, as far as possible, support the analysis with textual outtakes from the empirical material. This is an approach that lets readers see how the material was interpreted and how arguments and conclusions were arrived at, thereby allowing them to consider and affirm or reject those arguments and conclusions. This approach, together with transparency regarding the politics of the thesis, the choices made

during data collection, and the attempts to use terminology not engaged in the politicised discussions being analysed, cater for a reflexive research project.

3.6 Conclusion

This chapter detailed how the theoretical framework developed in the previous chapter was operationalised to analyse the REDD+ negotiations. This operationalisation was facilitated through a research design as well as a set of methods to collect and analyse empirical data. The design was adopted from Dean's (1999) 'analytics of government' research heuristic, and the analytical focal points were divided according to the dimensions of a regime of practice. The chapter also contextualised the empirical setting, the UNFCCC negotiation bodies where the majority of empirical material was gathered from. It subsequently detailed both data collection and analysis methods. It was explained that data was gathered from texts, interviews and observations from negotiation sessions, and that the textual data was the primary data source, whereas interviews were useful for purposes of corroboration, and observations mainly to build suitable background knowledge. Data analysis methods were also detailed and a clear separation was made between discourse analysis on the one hand and impressionist object tracing on the other. It was detailed how the latter was useful to address one of the analytical focal points whereas discourse analysis was suitable for the other focal points. Together, however, they contributed to addressing the main research question, which is how REDD+ is rendered governable through the UNFCCC negotiations.

A final section elaborated on the three notions of positionality, performativity and reflexivity and arrived at the argument that this thesis should be understood as a political research project. The next chapter acts as a bridge between the methodology that has been built

in this and the previous chapter on the one hand, and on the other the four analytical chapters that follows after the next. The chapter undertakes two tasks. It firstly elaborates on how climate governance was undertaken prior to REDD+, which is useful because the rationality of REDD+ is closely related to past climate governance initiatives. It also descriptively elaborates on REDD+, which is helpful in preparation for an analysis that includes technical topics.

Chapter 4

FROM CLIMATE GOVERNANCE TO REDD+

The task of this chapter is to sketch a historical background describing how the climate has been rendered governable before REDD+. This is a brief sketch that is not meant to be exhaustive of the research dedicated to climate governance. Rather, its function is to explain how markets have been advanced as instruments to govern emission reductions in a cost-effective manner. It is also to illustrate how climate governance depends on what can be called a ‘mastery’ of nature, an inscription of greenhouse gases as stocks and flows of more or less precise carbon quantities. This leads on to a section describing how a scheme very similar to REDD+ was rejected from earlier negotiations under the UNFCCC, mostly because this mastery was not deemed attainable; forests could not be represented as stocks and flows of carbon. Detailing this issue, and the role of markets, is relevant because both form a major part of the subsequent analysis of the REDD+ negotiations.

The chapter thereafter moves on to explain REDD+ in some detail. The REDD+ acronym is unpacked and its components are defined. A technical section follows describing how forest monitoring data is transformed to carbon quantities, which is relevant given that such transformations are a constituent part of representing forests as carbon, and because this aspect proved to be very difficult for Parties during later negotiations. Two sections follow that consider the main design elements of a REDD+ mechanism and the practical REDD+ related developments outside of the UNFCCC. Together, these sections are meant to provide a schematic introduction to climate governance and a technical background to REDD+.

4.1 Governing the carbon cycle

It has been suggested that the rationality of REDD+ resonates with sustainable development, a concept articulating a congruence between ecological sustainability and economic growth. However, sustainable development has legitimised and coordinated climate governance before REDD+. The preamble to the UNFCCC, for example, states

that responses to climate change should be coordinated with social and economic development in an integrated manner with a view to avoiding adverse impacts on the latter, taking into full account the legitimate priority needs of developing countries for the achievement of sustained economic growth and the eradication of poverty (United Nations, 1992: 3).

Climate governance should thus reduce emissions in a manner where social and economic development is promoted in tandem. Later in this section, markets are suggested as an important facilitator of such diverse aspirations. However, what can be called a ‘mastery’ of nature is another, and more fundamental, facilitator of climate governance.

This mastery means, in governmentality vocabulary, that ecological objects are inscribed in a ‘field of visibility’ in a way where they are, as far as possible, quantifiable, because this increases their manageability. Scholars of environmental history have detailed this historical and collective effort of inscription. Hajer (1996) points in particular to the work undertaken by the natural sciences, including systems theory and ecological science. Such research has sought to quantify the ecological state of the planet. Volumes of natural resources, trends in species populations, and hydrological and biogeochemical cycles have been measured, calculated and mapped. A field of visibility has been articulated in which nature can be managed: ‘the resources of the earth can be rationalized, indexed, measured, assessed and made better through the application of various technologies and modalities of rule’ (Rutherford, 2007: 298). Total

knowledge enabled through careful research has been imperative to create ‘a language that makes ecological decision making possible’ (Hajer, 1996: 252). With such a field of visibility, governments can seek to promote and facilitate sustainable development. They can quantify both the costs and impacts of various efforts to address environmental issues, allowing them to approach issues through procedures that are cost-effective and, as far as possible, congruent with social and economic development.

One such object that has been rendered manageable is the carbon cycle. This cycle started being inscribed before the popularisation of sustainable development (Callon, 2009, Methmann, 2014), but broad-based societal concern regarding human-induced disturbances of the cycle largely coincided with the onset of sustainable development in the late-1980s. Methmann (2014) argues that 1988 was a breakthrough year for climate change as a political issue. It saw the Toronto Conference comprising 300 government, NGO and science representatives calling for a convention to address climate change. The issue was acknowledged by both George Bush senior and Margaret Thatcher, and the latter considered it a ‘massive experiment with the system of this planet itself’ (in Paterson, 1996: 34). Moreover, the IPCC was established under the World Meteorological Organisation and the United Nations Environment Programme to ‘forge a scientific consensus’ on the matter, which ‘could inform decision makers’ (Methmann, 2014: 127). Such developments, Methmann (2014: 126) argues, enabled climate change to become ‘an issue of global politics’, which meant that ‘the global carbon cycle had to be acted upon politically’.

The subsequent years saw the UN General Assembly starting negotiations to establish a climate convention. In 1992 during the UN Conference on Environment and Development, the UNFCCC was presented as a general legal framework under which future negotiations to stabilise greenhouse gas concentrations in the atmosphere would be facilitated. The ability of

the UNFCCC to facilitate such negotiations was premised on the IPCC's assumed ability to forge a scientific consensus on the role of human-induced greenhouse gas emissions in the atmosphere and likely consequences thereof. Only then could Parties proceed to negotiate forms of political intervention to alter emission trends. Oels (2005: 194, 198) labels this mastery over nature and its carbon cycle *green governmentality* to designate 'a system of geo-power, eco-knowledge and enviro-disciplines' rendering the planet into 'a spaceship that humankind is able to steer on the basis of data and models provided by the natural sciences'.

Through research on various aspects of the carbon cycle, it has been estimated that of global carbon dioxide emissions, between 12 – 25% stem from deforestation (Brown 2013). Recent estimations support the lower end of that scale (van der Werf et al., 2009, Lang, 2014). These figures can be compared to emissions from the global transport sector that is held responsible for 13% of emissions, suggesting that the two sectors are almost tied (Brown 2013). Knowledge of the role of forests in the carbon cycle made it an object of government, a piece of the puzzle that must be addressed in order to regulate the cycle. REDD+ is premised on the same type of mastery over nature, where governance is dependent on monitoring devices representing forests as carbon quantities. Through such a representation, the impacts of governance can be measured to ascertain forest conservation progress and rewards can be disbursed accordingly.

Exact and quantifiable knowledge is thus needed in order to govern REDD+, but it is also necessary if this governance is to be facilitated through markets, because tradable assets such as carbon credits depend on exact quantities. Markets have been a part of climate governance since the Kyoto Protocol (KP), which sets emission 'caps' for Annex 1¹³ Parties to the UNFCCC. Achieving emission reductions under those caps is subsequently facilitated through

¹³ Annex 1 countries are considered 'developed' under the UNFCCC and are the only countries committed to reduce emissions under the KP. For a list of Annex 1 countries, see: UNFCCC (2014e).

a range of domestic initiatives including regulatory measures, education and technological innovation. However, the KP also includes emission trading mechanisms that are assumed to facilitate cost-effective greenhouse gas mitigation. Such trading mechanisms were rendered intelligible by scholars in the discipline of resource economics. Callon (2009: 538) argues that ‘without this contribution from economic theory, carbon markets would have been literally unthinkable’.

The emission trading mechanisms of the KP are three so-called flexibility mechanisms: *emissions trading*, *joint implementation* and the *clean development mechanism* (CDM) that facilitate emission trading within Annex 1 countries, and between Annex 1 and non-Annex 1¹⁴ countries. The CDM and, in particular, its capacity as an offset mechanism is explained further here given that REDD+ has also been advanced as such a mechanism. The CDM promotes the institution of clean development technologies to reduce emissions in a variety of sectors in non-Annex 1 countries. If such technologies are instituted and reductions in emissions are quantified according to strict measurement and validation procedures, they can be traded and used to comply with emission reduction commitments by Annex 1 countries under the KP; this is called offsetting (Lederer, 2011). Offsetting is considered cost-effective for Annex 1 countries because emissions are assumed to be reduced more cheaply in non-Annex 1 countries. One of the assumptions guiding this idea is that Annex 1 countries have already instituted technologies to reduce emissions and that such innovations have a bigger impact elsewhere. In other words, a bigger dent is made with the same amount of money.

The term clean technologies should be understood broadly because the CDM includes a range of different project types including biomass energy, methane avoidance, hydro and wind power, and projects that generate offsets from forest plantations on bare lands, but not projects

¹⁴ Non-Annex 1 countries do not have emission reduction commitments under the KP. For a list of such countries, see: UNFCCC (2014f).

aiming to reduce deforestation in existing forests (UNEP-DTU, 2014).¹⁵ The rationale for such projects is, however, the same, which is that emissions are reduced more cost-efficiently in non-Annex 1 countries. The CDM can thus be implemented in different sectors, and this means that emission reductions are based on an assortment of greenhouse gases. Market-based trading based on different gases necessitates a representation of them as being ‘the same’ (MacKenzie, 2009). This has been facilitated by agreeing on the establishment of global warming potential (GWP) indicators for different gases (MacKenzie, 2009). GWPs were important in facilitating the invention of the tCO₂e during UNFCCC negotiations in 2001, which stands for tonnes of carbon dioxide equivalents. They are packages of greenhouse gases made equivalent to carbon dioxide that ‘circulates around the world as an abstract unit, a commodity’ (Lövbrand and Strippel, 2011b: 195). When CDM projects reduce emissions and sell those reductions, this is done in the form of tCO₂e, where GWPs enable comparability between different greenhouse gases.¹⁶

Another necessity for the CDM is a representation of carbon emissions as having the same atmospheric impact no matter where they take place. Emissions reduced through CDM projects must appear to equal the emission of the same amount of carbon in another part of the world. This representation was enabled by meteorology and biochemistry research ‘imagining an atmospheric mixing of carbon’ (Lövbrand and Strippel, 2011b: 194). The argument here is that all emission reductions, no matter where they are reduced, contribute to lower levels of atmospheric carbon. To exemplify this rationale, CDM projects can be registered with the aim to improve cook stoves to reduce emissions, in part by reducing pressure on forests (CDM

¹⁵ Reducing emissions from deforestation was considered for, but excluded from, the CDM. See further the below section: ‘From climate governance to REDD+’.

¹⁶ There are several different carbon units being traded under the KP and its flexibility mechanism, all based on the tCO₂e (e.g. Lövbrand and Strippel, 2011b). For the purpose of this thesis, however, the common term ‘carbon credit’ is used to designate such commodities.

Executive Board, 2012). Generated emission reductions can thereafter be equalled with continued emissions from the burning of fossil-based fuels in Annex 1 countries.

Carbon markets were developed with the help of such natural scientific and economic postulates. Today, carbon markets are performed by an assortment of actors including accountants, UN officials, auditors, verifiers, producers and consumers (Lovell and Liverman, 2010, Lovell and MacKenzie, 2011, Paterson and Stripple 2012) that construct a web of relations linking the carbon cycle to emission markets in the name of cost-efficiency. Moreover, '[t]hrough their every-day efforts to make carbon transactions operational, the "tCO₂e" is today known as a "thing", a basic unit of account, often understood to be a commodity, but increasingly also conceptualized as a currency' (Lövbrand and Stripple, 2011b: 194). In other words, just like the carbon cycle had to be rendered governable through research constituting it as flows of objects amenable to regulation, so had market actors to constitute carbon markets as systems that could partake in this regulation.

Governmentality scholars have sought to characterise how climate governance is practically undertaken through carbon trading. Lövbrand and Stripple (2012), drawing on Dean (1999), advance the two technologies of performance and agency for this characterisation. The technology of performance refers to the mastery of nature discussed above. It is the ensemble of inscription devices that facilitate representations in terms of carbon quantities. The technology of agency, on the other hand, represents subjects as market actors. Subjects are not primarily governed through command-and-control policies, but rather through economic criteria where market participants can calculate their losses and gains for different courses of actions. Countries with emission caps have monitoring equipment to oversee their progress in relation to the caps, and CDM project developers monitor emission reductions over time. There is a constant awareness of carbon stocks and flows. If the technology of performance designates

the devices enabling this awareness, the technology of agency designates how market participants are primarily governed against such performance indicators and not through strict regulation enforcing a particular behaviour. Market actors are, in other words, engaged as ‘self-regulating economic actors ... put under “pressure” ... [to] contribute to environmental improvements’ (Mol, 2002b: 103). By participating in the KP and its flexibility mechanisms, market participants evaluate their performance with the help of monitoring equipment, and they are assumed to regulate their behaviour against the sanctions and profits that their different courses of action will result in.

The regime of practice of climate governance is thus based on a rationality resonating with sustainable development in the sense that emissions should be reduced through cost-effective procedures to facilitate social and economic development, and to provide economic gains for implementers of CDM projects. This has been enabled through natural scientific research articulating a field of visibility in which emissions are quantifiable and hence governable. Through the application of monitoring technologies, self-regulating economic actors are put under pressure to regulate their behaviour according to sanctions and profits. REDD+ was considered for inclusion in the CDM. However, it met with both political and ‘technical’ resistance. Inscription devices were not developed enough to facilitate a representation of forests as more or less exact carbon quantities. There were too many uncertainties and this would have complicated both governance and carbon trading. This is considered in detail in the next section, because these issues reappear in later analytical chapters.

4.2 From climate governance to REDD+

The role of forests in the KP and its flexibility mechanisms was not settled until 2001 with the adoption of the Marrakesh Accords. The Accords consider both forests in Annex 1 countries and the role they could play in CDM projects in non-Annex 1 countries. One of the discussed activities was reducing emissions from deforestation. This activity concerns standing forests under threat of deforestation, where avoiding deforestation is counted as sequestered carbon that could generate carbon credits for offsetting purposes. In other words, this activity is very similar to REDD+. Negotiators, however, decided against including it in the CDM (Boyd, 2010).

There were several reasons why reducing emissions from deforestation was excluded from the CDM. Boyd argues that since the CDM can be used to meet commitments to reduce emissions in Annex 1 countries under the KP through offsetting, it was feared that the inclusion of the activity would entail that too many emissions are offset at the expense of rigorous cuts in domestic emissions. Parties also feared that the activity would lead to a situation where they would have to surrender control of their forests for extended periods of time; that is, it was a sovereignty issue (see further, Boyd, 2010). Other reasons were, however, of a more technical character and concerned an inability of inscription devices to accurately monitor emission reductions over time, which is necessary for emission trading. This section considers those technical issues as they pertain directly to REDD+ in its current form, and thus gives a blueprint of some of the major issues that were considered by Parties in later negotiations.

A suitable way to present the issues is to consider them in relation to afforestation and reforestation (A/R) projects that were permitted in the CDM. A/R projects concern forest plantations where planted tree seeds are monitored over time to track increased volumes of sequestered carbon. Sequestered carbon in turn generates carbon credits that can be used as

offsets.¹⁷ Reducing emissions from deforestation differs from A/R projects because it concerns already existing forests under threat of deforestation, and not bare lands where forests can be planted. For reducing emissions from deforestation, carbon amounts, or ‘stocks’, must be monitored over a certain period of time and if there is a reversal in the emission trend, a measured amount of emission reductions are considered avoided and could, if it was not excluded from the CDM, be transformed into carbon credits and used as offsets.

A reference level (RL) is a pivotal device when calculating such emission reductions.¹⁸ RLs provide a benchmark against which emission reductions are measured over time. For A/R projects they are defined as ‘the scenario that reasonably represents the sum of the changes in carbon stocks in the carbon pools within the project boundary that would have occurred in the absence of the proposed project activity’ (UNFCCC, 2003: 20). This definition also corresponds to reducing emissions from deforestation and it explains that a RL is a hypothetical scenario of the amount of carbon that would have been stored on the location where forests are planted or where measures to avoid deforestation are implemented after a certain amount of time, *if such measures are not implemented* (see figure 1 below). It may be assumed that a RL is always stated as zero in A/R projects given that no trees would likely be planted without an A/R project developer. However, certain A/R projects stating a zero RL have in the past not been approved when under review with the argument that there is often an amount of natural regeneration of the biota (Michaelowa and Rawat, 2007). To determine a RL for A/R projects therefore requires data of biophysical conditions to estimate likely future scenarios.

¹⁷ Such credits are, however, temporary. See further: Ebeling and Vallejo (2011).

¹⁸ In UNFCCC documents, the term reference emissions level (REL) is used to denote only ‘REDD’ activities (deforestation and degradation), whereas reference level (RL) also denotes the ‘+’ activities: conservation of forest carbon stocks, sustainable management of forests, and enhancement of forest carbon stocks (Angelsen et al., 2011). Moreover, REL and RL are sometimes supplanted by the term ‘baseline’. In this thesis, the term RL will be used to denote all these terms. See the below section: ‘The REDD+ acronym and design elements’, for a discussion on the different activities included in REDD+.

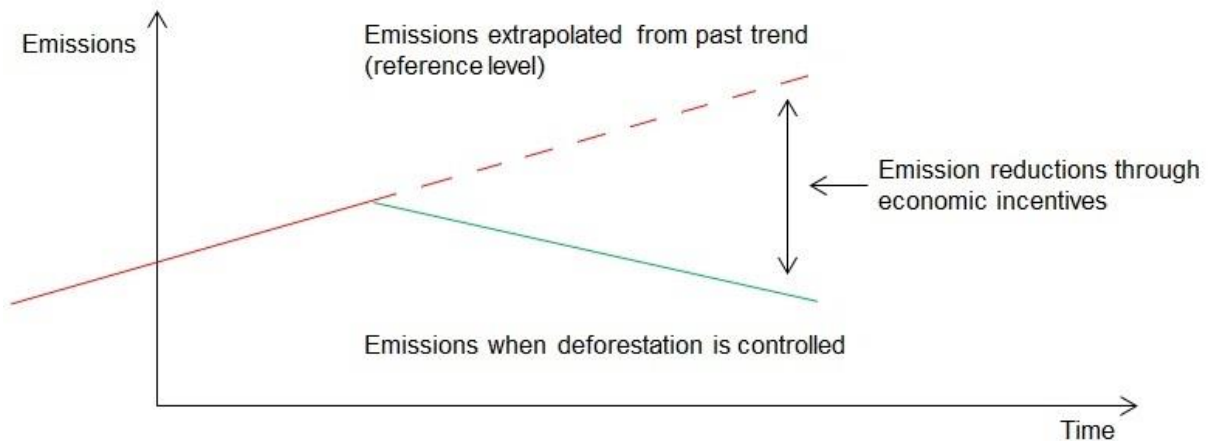


Figure 1: Reference level relevant for REDD+ projects.

For reducing emissions from deforestation, a RL estimates a hypothetical scenario of the amount of carbon there would be in an existing forest after a certain amount of time if a project was not implemented. This can be done through different methods. For example, one method may be based on historical data and project a future trend based on past forest loss. The average annual deforestation rate of the future is taken to be the same as the rate of the past in this method. Another method may include other factors, such as a planned infrastructure project, which can be assumed to affect deforestation trends. The future deforestation trend is not taken to be exactly the same as the past trend in this method, because the infrastructure project may be assumed to lead to further forest loss and this is factored into the method (Angelsen et al., 2011). The accuracy of RL methods cannot be directly verified, but they can be tested on past time series (e.g. Griscom et al., 2009). While such studies show what RLs have been more accurate in the past, it is not a guarantee that the same is true if they were deployed now, because the factors influencing forest loss may change and this would affect the trend. That is, the assumptions that turned out to be accurate when tested on past time series are not guaranteed

to be the best assumptions to base a current RL on. It follows that certain RLs can be deemed more accurate than others, but this can only be assumed and *never directly verified*.

After a RL is established, forest governance policies are implemented to decrease deforestation, and hence also carbon emissions. Possible emission reductions will be measured against the hypothetical ‘business as usual’ RL. The difference between the actual and the hypothetical scenario is considered avoided emissions, and that difference would be the basis for generating carbon credits (Chagas et al., 2013). It was considered difficult to establish reliable RLs during the CDM negotiations. One of the issues was RLs themselves. While it was realised that they are an inseparable component of the scheme, there were concerns regarding their inevitably hypothetical character. Another issue was related to data availability, because RLs often rely on high quality data of past deforestation trends. Such issues were one of the reasons why reducing emissions from deforestation was excluded from the CDM (Fearnside, 2001, Boyd, 2010). However, four other major issues were additionality, leakage, non-permanence and monitoring capacities. They are explained in turn as they jeopardised a representation of forests as quantifiable carbon stocks, and because they continued to be contentious issues during later REDD+ negotiations.

Additionality: Carbon sequestering projects must prove to be additional. A/R projects are considered additional if ‘the actual net greenhouse gas removals by sinks [i.e. sequestration of greenhouse gases in forests] are increased above the sum of the changes in carbon stocks in the carbon pools within the project boundary that would have occurred in the absence of the registered CDM afforestation or reforestation project activity’ (UNFCCC, 2003: 18). In other words, additionality corresponds to knowing with certainty that there actually is a difference between the RL and the amount of carbon sequestered through an A/R project after a certain amount of time. The same understanding of additionality applies to reducing emissions from

deforestation. Since additionality is estimated against a RL, it is of utmost importance that the latter is considered reliable. For example, if a RL would suggest a zero increase in carbon stocks over time without a project and the project generates 100 carbon credits, then all those 100 credits would be additional and potentially generate payments based on offsets. However, if the RL would suggest that natural regeneration of the biota will occur corresponding to 20 carbon credits, and the project still generated 100 credits, then only 80 credits would be considered additional and generate payments. The RL is thus the basis for determining perceived additionality (and the amount of potential credits), which makes it an important concept that, moreover, relies on assumptions about future trends in carbon quantities that can never be directly verified. If these assumptions are considered too difficult to estimate with certainty, additionality may be called into question.

Moreover, additionality can be called into question if Annex 1 countries only reduce emissions through offsets and omit to undertake domestic measures. If this would occur, no overall additional emission reductions are achieved. As noted above, one of the reasons why reducing emissions from deforestation was excluded from the CDM was a concern that too many emissions would be offset at the expense of rigorous cuts in domestic emissions. Ensuring additionality thus rests, in part, on having Annex 1 countries commit to rigorous emission caps.

Leakage: Additionality is not only jeopardised through RLs judged faulty or weak Annex 1 emission caps; leakage is also a problem. Reducing emissions from deforestation depends on not cutting down trees. However, forest resources may be part of peoples livelihoods or of lucrative logging operations. If a project is instituted, the socioeconomic pressure on the forest may be transferred to other parts of the country, or even to other countries. A consequence would be that carbon is emitted anyway, but in another location. Carbon emissions are therefore leaking and additionality is compromised. There are a variety of tools available to assess the

potential of leakage, as well as guidelines for how to monitor and respond to it (Brown et al., 2000). However, Boyd (2010: 871) argues that ‘leakage was considered to be one of the more difficult problems to solve’, therefore contributing to excluding reducing emissions from deforestation from the CDM.

Permanence: Additionality is also called into question if permanence is considered an issue. To institute projects that reduce emissions from deforestation is one thing, but it is a different matter to guarantee that they keep on sequestering carbon in an uncertain future that may include changes in countries’ forest governance arrangements as well as extreme climate conditions. If sequestered carbon would be emitted in the future, no net reductions in emissions are considered to have occurred, which has the consequence that additionality is compromised (Ebeling and Yasue, 2008). This issue of permanence was ‘considered problematic’ when negotiating reducing emissions from deforestation, particularly ‘given the distinctive biological vulnerabilities of forests combined with the lack of basic forest governance and enforcement capabilities in many tropical forest countries’ (Boyd, 2010: 871).

Monitoring emission reductions: Emission reduction projects must be monitored over time to ascertain whether emissions are reduced. Monitoring activities can be undertaken on the ground, from airplanes and satellites, and in various combinations. Monitoring data of forest cover change is thereafter converted with the help of certain conversion factors from forest cover to carbon content, since carbon cannot be directly monitored but is the object that must be quantified (Verchot et al., 2012).¹⁹ Monitoring equipment and practices thus inscribe forests and represents them as carbon stocks and flows. However, such a representation is not only dependent on monitoring devices and practices, but also on the ability to set reliable RLs, ensure

¹⁹ This aspect is considered further below.

permanence and avoid leakage.²⁰ All factors, together, represent forests as more or less exact quantities of carbon.

Boyd (2010: 870-871) argues that ‘measurement and monitoring were viewed as particularly challenging in the context of avoided deforestation projects’. One of the reasons for this challenge was that – unlike the REDD+ currently negotiated that is set to have a national level implementation – the activity was to be implemented on a local project basis, entailing that monitoring had to be undertaken to ascertain if leakage occurred to surrounding areas. Such leakage monitoring ‘would have imposed massive monitoring and transaction costs, with no clear methodology to account for direct or indirect emissions leakage’ (Boyd, 2010: 895).²¹ In other words, while accounting for leakage was considered difficult, it was also considered very costly to undertake leakage monitoring.

Taken together, it was considered difficult to ensure that projects resulted in quantifiable emission reductions over time (the RL and additionality issues), and that such reductions would not be compromised by increased emissions elsewhere or later (the leakage and permanence issues). Inscription devices were not considered accurate enough to produce a representation with confidence in the volumes of carbon stocks and flows, which is necessary in a scheme where carbon credits with exact quantities are exchanged for money. Moreover, accuracy issues are compounded in an offset scheme because carbon credits are the basis for reducing fewer emissions elsewhere. On a different note, given that leakage monitoring costs would have been ‘massive’, it is also uncertain that the activity would have produced cost-effective emissions reductions, and as argued above, this is a key rationale for market-based greenhouse gas mitigation. As such, reducing emissions from deforestation was deemed ungovernable and excluded from the CDM.

²⁰ Or, alternatively, to appropriately account for non-permanence and leakage.

²¹ For a differentiation between direct and indirect leakage, see: Aukland et al. (2003).

4.3 Substantiating the background to REDD+

REDD+ was reconsidered in late 2005 and adopted as part of the Bali Action Plan (BAP) in 2007, which meant that it moved from being an option under consideration to become part of an action plan that sought to adopt a legally binding agreement in Copenhagen in 2009. Negotiators thus conceived of REDD+ as being governable and a primary reason was an increased faith in the ability of the inscription devices to represent forests as more or less accurate carbon quantities. This faith in inscription devices is considered in detail in chapter seven and eight. Here, however, further details are sketched to complement the above section and provide the reader with a technical background to REDD+.

This is done by briefly considering what the REDD+ acronym stands for and how the different elements of that acronym can be defined. A subsequent section considers how to convert forest cover trends to carbon quantities, because this was also an aspect that Parties struggled with during the later negotiations. This is followed by a section detailing a simplified inventory of the design elements necessary to partake in REDD+ that has been agreed throughout the negotiations. A final section briefly details how REDD+ has developed outside of the UNFCCC. These sections pre-empt parts of the negotiations, but this is considered necessary to further substantiate for the reader how REDD+ is thought to function in practice. The REDD+ acronym is considered first.

When reconsidered in 2005, the scheme was called reducing emissions from deforestation, or RED, and was similar to the activity considered for the CDM, aside from the ambition to have a nationwide implementation. In 2007, when the scheme was included in the BAP, it was noted ‘that forest degradation also leads to emissions, and needs to be addressed

when reducing emissions from deforestation’ (UNFCCC, 2007a: 8). RED thus became REDD with the inclusion of forest degradation; the next paragraph suggests how to differentiate these two activities. Three years later, at COP16 in Cancun, REDD became REDD+ when three further activities were included. The five activities of REDD+ are:

- (a) Reducing emissions from deforestation;
- (b) Reducing emissions from forest degradation;
- (c) Conservation of forest carbon stocks;
- (d) Sustainable management of forests;
- (e) Enhancement of forest carbon stocks. (UNFCCC, 2010b: 12)

The three new activities differ from avoiding deforestation or degradation since they concern efforts to increase existing carbon stocks. To decrease carbon emissions is, in other words, coupled with activities to increase the amount of carbon in forests that are not experiencing deforestation or degradation. This thesis consistently uses the acronym REDD+ when referring to the scheme, aside from when the analysis explicitly considers one of the activities.

None of the activities have been defined throughout the REDD+ negotiations. However, given that deforestation and forest degradation form a large part of the analysis, the two activities are explained here by drawing on definitions from elsewhere that may, or may not, be used for REDD+. To explain deforestation, definitions of *forest* and *deforestation* used under the KP are borrowed (the KP does not define the other activities), and to explain *forest degradation*, a characterisation rather than a definition is borrowed from the IPCC.

Most forest definitions include threshold parameters such as minimum level of crown cover, minimum height and minimum area, and for the KP, Parties could define their forests by selecting from predetermined minimum ranges with crown cover between 10 and 30%, height between 2 and 5 meters, and area between 0.05 and 1 hectare (UNFCCC, 2006a). With

threshold parameters adopted certain land becomes qualified as forested while other parts are qualified as non-forested. Deforestation was here defined as ‘the direct human-induced conversion of forested land to non-forested land’ (UNFCCC, 2006b: 5). This definition means that if countries are above the chosen crown cover threshold, their forests are not being deforested, but as soon as they go under, deforestation is considered to be occurring.

The IPCC has suggested that forest degradation can be conceptualised as ‘[a] direct, human-induced, long-term loss (persisting for X years or more) or at least Y% of forest carbon stocks [and forest values] since time T and not qualifying as deforestation’ (in UNFCCC, 2006a: 12). The parameters X, Y, and T were left undefined. In other words, degradation can be understood as diminishing carbon stocks in forests, for example through selective harvesting or fuelwood collection, where the threshold of deforestation is not crossed. Activities resulting in forest degradation are not as easy to detect as those resulting in deforestation, because selective harvesting may not reduce much crown cover, which makes it difficult for above-ground inscription devices, such as satellites, to monitor the activity (Herold et al., 2011). Later chapters consider in detail the difficulties negotiators had when seeking to ‘enrol’ forest degradation.

A definition for the other three activities is not attempted since they do not figure prominently in the analysis. However, those activities are closely connected with the two activities aiming to reduce deforestation and degradation. Dutschke (2013: 7) elaborates:

Conservation of forest carbon stocks could qualify as reduced emissions from deforestation. Reducing emissions from forest degradation can be seen as a consequence of sustainable forest management (Reduced Impact Logging, RIL). Enrichment planting as part of the enhancement of forest carbon stocks, on the other hand, is also a modality of sustainable forest management. Another form of enhancing forest carbon stocks is reforestation of currently non-forested areas.

How the activities will be disentangled remains open. Suffice to note for the purpose of this thesis that the contestation with regards to the ability of inscription devices to monitor forest degradation may also be relevant for the three latter activities if crown cover is not distinctly altered, because satellite monitoring is difficult in such scenarios. Monitoring an activity is, however, only one of two steps in transforming forests to carbon. The second step is considered in the next section.

4.3.1 Transforming forest cover to carbon quantities

Monitoring the different REDD+ activities is challenging, but it is even more challenging to transform such monitoring data into carbon quantities. This is, however, a crucial aspect in the process of inscribing forests as carbon quantities, and thus also in the production of carbon credits. It is in this process of transformation that a part of the perceived uncertainties lay that catered for exclusion of the scheme from the CDM. This is considered in some detail here because it also proved to be a contentious aspect during the later REDD+ negotiations. It is briefly explained how to transform monitoring data to carbon quantities through methods provided by the IPCC, because Parties have been encouraged to use IPCC guidelines when undertaking their own transformations. Three different methods, called ‘tiers’, are explained that differ in terms of rigour and costs. The procedures within the tiers were not considered at length by negotiators, and are therefore not essential for the analysis. However, they did consider the selection of tiers in detail and a brief explanation of the procedures within the tiers helps elucidate the significance of those negotiations.

To arrive at carbon quantities, Parties embark from the following equation:

$$Emissions = Activity\ data * Emission\ factor$$

Activity data refers to monitoring changes in activities such as deforestation and degradation, and this is undertaken with the help of satellites.²² The emission factor, on the other hand, refers to the amount of emissions, or reductions in emissions, per unit area in a forest when an activity such as deforestation is occurring. It is measured in metric tonnes of carbon dioxide per hectare (GOFC-GOLD, 2014: section 1.2.3). Activity data and emission factor combined therefore indicate emissions. Emissions are not directly measured. Instead, activity data is measured and emission factors are applied to estimate emissions. Emission factors vary between and within forests because carbon quantities are dependent on a range of factors including the climate and the tree species that populate forests. The IPCC details how emission factors can be developed through three different methods or ‘tiers’ that vary in terms of accuracy but also resource intensity (IPCC, 2003: section 3.1.5).

Tier 1 is the most basic method and does not require any on-the-ground work to develop emission factors because it uses default values provided by the IPCC that corresponds to broad forest types at a continental scale. For example, ‘subtropical dry forest’ is assumed to have 130 tonnes of biomass per hectare, whereas ‘tropical shrubland’ is assumed to have 70 tonnes (Watson, 2009: 17). These values that are derived from extensive field research can be used to calculate carbon quantities by dividing the biomass in two since roughly half of the biomass is assumed to be carbon (Lovell and MacKenzie, 2014). The values can then be put into the equation specified above to estimate emissions. However, default values are considered uncertain and this is based on the assumption that carbon quantities differ depending on species type and climate, and the application of default values does not account for such variations in,

²² The IPCC provides three different approaches for assessing activity data. See further: IPCC (2006: ch. 14).

for example, different subtropical dry forests. Due to these uncertainties, tier 1 is estimated to have an error range of +/- 50% (Köhl et al., 2009, GOFC-GOLD, 2014).

Tier 3, on the other hand, seeks to capture local carbon values and to account for variations between different species and climates. It relies on field work in multiple sample plots to measure the size of trees, often in terms of diameter and sometimes height. The figures are then used to compute biomass based on allometric equations (not the equation specified above) that specify relationships between measurements such as diameter and biomass.²³ In other words, size values are plugged into an equation and out comes a biomass figure that can be turned into a carbon figure, which in turn can be plugged into the equation specified above in italics to estimate emissions. Allometric equations vary between species and climates because the relationship between measurements such as diameter and biomass is species and climate dependent. Measurements are as a consequence stratified by species groups and geographical regions, and plugged into different equations (Lovell and MacKenzie, 2014).

What makes tier 3 particularly resource intensive is that allometric equations are often lacking (Verchot et al., 2012) and this means that local equations must be developed. This involves what is called destructive harvest measures where trees are first measured and then harvested, and where a sample of the tree is dried and weighed to derive a relationship between measurements such as diameter and biomass for particular tree species in particular locations. In other words, to develop equations necessary for estimating emission reductions through forest conservation, trees must be cut down (Lovell and MacKenzie, 2014). These procedures make a tier 3 method very resource intensive. Brown (2002: 366) argues that '[s]ampling a sufficient number of trees to represent the size and species distribution in a forest to generate local allometric regression equations with high precision, particularly in multi-species forests,

²³ See Lovell and MacKenzie (2014) for a more detailed account of allometric equations.

is extremely time-consuming and costly'.²⁴ Tier 2 relaxes these requirements to some extent. Instead of locally specific equations, broader subdivisions are made of the biota and emission factors are developed corresponding to geological subregions and specialised land uses within countries. However, extensive on the ground work would have to be undertaken to develop allometric equations specific for those subregions and land-use categories.

The IPCC suggests that a key category analysis should be undertaken to determine what tier method to use. Such analyses should be undertaken when compiling greenhouse gas inventories that are used to notify the UNFCCC of total emission trends. These inventories include forest emissions, but also emissions from the energy, industry, agriculture and waste sectors. Key categories are those categories that combined constitute 90 or 95% of the emissions (it depends on what level of rigour is used when undertaking the analysis), and the IPCC suggests that non-key categories can be estimated with a lower level of rigour, thus producing higher uncertainties (IPCC, 2003). For key categories, however, tier 2 or 3 should be applied.

Parties must thus attain activity data, and they must also apply suitable emission factors developed through higher tiers if the activity is considered a key category. To complicate the matter further, when estimating emissions from an activity such as deforestation, Parties do not only focus on living trees. Rather, emissions should, according to the IPCC, be estimated for five different carbon pools. These pools are: *above-ground biomass* (e.g. trees), *below-ground biomass* (e.g. roots), *dead wood* (e.g. wood lying on the surface and dead roots), *litter* (e.g. similar to dead wood but smaller diameter size) and *soil organic material* (e.g. carbon in soils) (IPCC, 2003: section 3.1).

Above-ground biomass is often the dominant carbon pool, and the above discussion on emission factors pertained to that pool. To develop such factors for other pools, other methods

²⁴ Verchot et al. (2012) suggest that general equations can be used for a variety of tree species, but such equations must be validated through destructive sampling to ensure their accuracy.

are applied. However, here too the level of rigour will depend on the tier that is followed. Higher tiers need to be applied for carbon pools of key category activities when the pool contributes to 25-30% of net changes in carbon quantities (IPCC, 2003: section 3.1.6). If they contribute to less, tier 1 based on default values along with other simplifying assumptions can be applied. However, tier 1 default values are assumed to have a high uncertainty for certain pools. For example, for soil carbon, tier 1 is estimated to have an uncertainty of up to +/- 90% (GOFC-GOLD, 2014: section 2.4.2).

The IPCC argues that this three-tiered approach ensures the ‘highest levels of certainty, while using available resources as efficiently as possibly’ (IPCC, 2003: section 3.1.6). UNFCCC negotiators consider the approach credible and have encouraged countries implementing REDD+ to apply it (UNFCCC, 2007a). Indeed, Methmann and Stephan (2014) argue that the approach has silenced scientific debates for policy makers and carbon market actors with regards to how forest carbon should be measured. It has been received favourably because it permits the use of tier 1 methods that are comparatively cost-effective and easy to implement for non-key categories. It also forces countries to apply higher tiers for those categories that are considered key and can have a significant impact on changes in carbon quantities. Adopting these guidelines is thus assumed to provide a suitable balance between accuracy and cost-efficiency, and to produce carbon credits that can be traded on carbon markets.

What this means for REDD+ is that a strict monitoring regime is suggested, where emissions from all carbon pools should be estimated,²⁵ and where higher tiers should be used for key categories. These strict criteria may be problematic for countries implementing REDD+ given their current capacity. Romijn et al. (2012) indicate that few countries are able to estimate

²⁵ Certain pools can, however, be omitted when measuring degradation if it is not a key category (GOFC-GOLD, 2014: section 1.2.3.2).

carbon quantities for all carbon pools, with only seven out of 99 analysed countries having ‘very good’ capacities. Moreover, there is an acute lack of relevant allometric equations in many parts of the world, in particular in sub-Saharan Africa where ‘less than 1% of the tree species in the region have country-specific’ equations (Verchot et al., 2012: 274). The lack of local equations means that many countries are far from ready to use higher-tier approaches when estimating emission reductions in REDD+. For example, as of 2012, no sub-Saharan country had the capacity to use a tier 2 approach (Verchot et al., 2012).

The various assumptions and practices within the tiers were not major points of discussion within the negotiations, but Parties considered whether or not they should stick with IPCC guidance or apply more lenient criteria, and as this section has elaborated, such considerations matter for the perceived uncertainty of carbon quantities. Applying emission factors to activity data is thus a crucial step when transforming forest cover change to tradable carbon quantities and the negotiations pertaining to this is analysed in chapter eight. Such methodological considerations are included in countries’ national monitoring systems, which is one of the mandatory design elements necessary to partake in REDD+. The next section briefly considers those elements.

4.3.2 REDD+ design elements

To formally partake in REDD+ and receive payments in exchange for carbon credits, a range of design elements are compulsory. *Figure 2* below shows a simplified diagram of those elements. The RL should be familiar, and measurement, reporting and verification have also been considered to some extent. Together, the two form a national forest monitoring system that is tasked to represent forests as carbon trends over time. This system should be based on both remote sensing, by which is meant data gathered from satellites or airplanes, and ground-

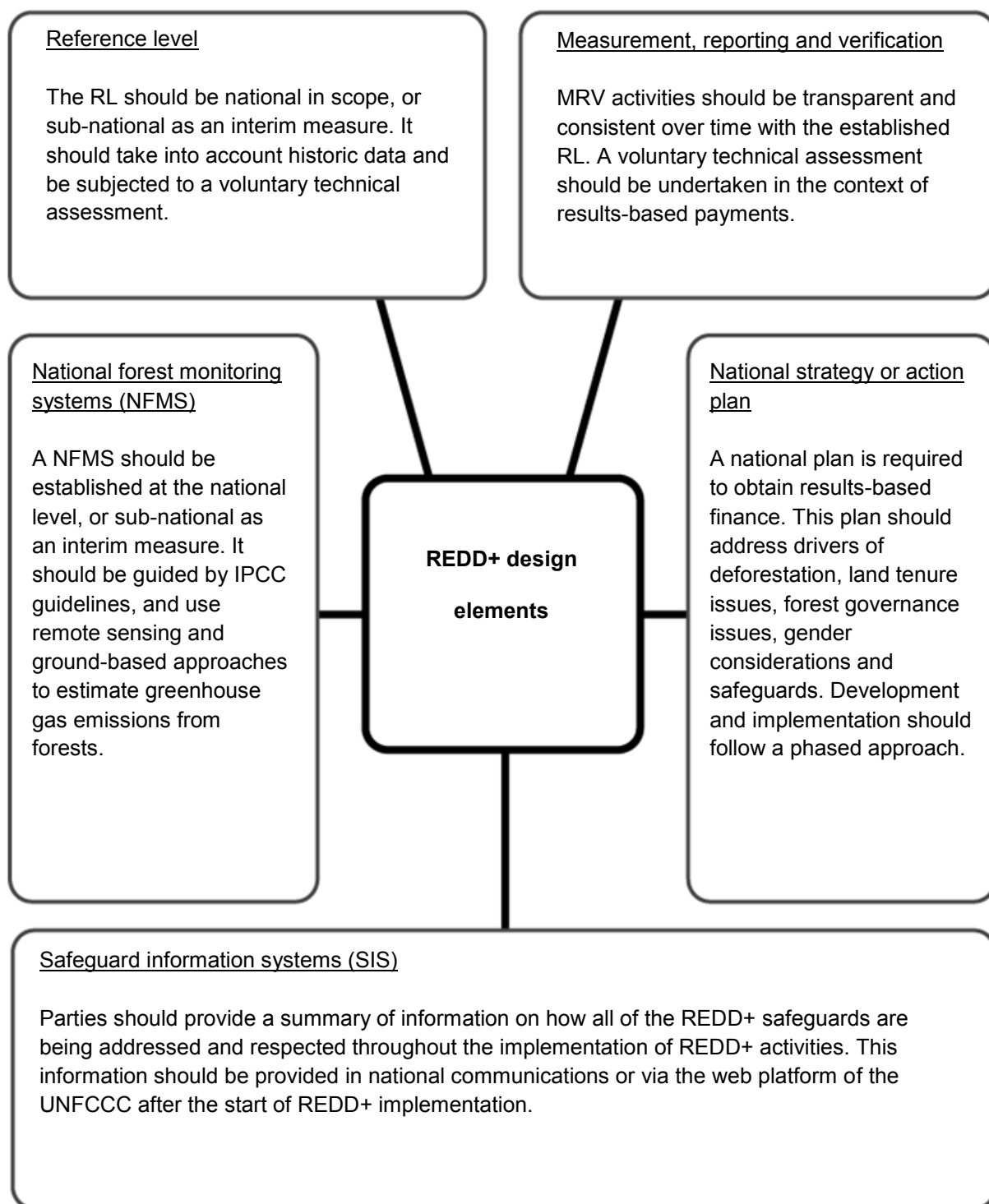


Figure 2. REDD+ design elements, adapted and simplified from WWF et al. (2014) with text from adopted UNFCCC decisions.

based approaches, to complement remotely sensed data. The reliance on guidelines from the IPCC can also be noted in the design elements and this is a frequent occurrence in the negotiations. Not all methodologies are negotiated in detail as the IPCC provides guidelines that are generally taken to be credible. Implementing states have also been bestowed a considerable degree of flexibility to develop methodologies, which is to avoid rigid prescriptive rules that may not be universally applicable.

RLs and emission reductions should be technically assessed, but on a voluntary basis and in the context of results-based payments, i.e. a market or a fund purchasing carbon credits. However, for market-based approaches, further verification procedures may be developed (UNFCCC, 2013b), and they may be less voluntary. A national strategy is also necessary in order to participate in REDD+. It contains a range of elements agreed throughout the negotiations that are considered in detail in the following chapters. Implementing states are tasked to consider tenure, gender and governance issues while also curbing the drivers of deforestation and forest degradation.

Parties should also institute a range of safeguards that are meant to be ‘do-no-harm clauses’ that protects the knowledge and rights of local communities and Indigenous Peoples, ensures their participation, protects biodiversity and ensures permanence while avoiding leakage. Finally, the safeguards should not only be implemented, but also communicated through a safeguard information system. The negotiations of most of these design elements are analysed in detail in the coming chapters. The next section, however, briefly considers a range of REDD+ actions and initiatives undertaken in parallel with the negotiations.

4.3.3 REDD+ outside of the UNFCCC

The BAP was meant to result in a legally binding agreement in Copenhagen in 2009. While such an agreement could not be reached, REDD+ has continuously evolved and may form part of an agreement in late 2015 to be operationalised by 2020. REDD+ actions outside of the UNFCCC have also evolved during this timeframe. The BAP marked the start for broad-based practical REDD+ activities. The plan states that Parties to the UNFCCC are encouraged

to support capacity-building, provide technical assistance, facilitate the transfer of technology to improve, inter alia, data collection, estimation of emissions from deforestation and forest degradation, monitoring and reporting, and address the institutional needs of developing countries to estimate and reduce emissions from deforestation and forest degradation. (UNFCCC, 2007a: 8)

The disappointing outcomes of Copenhagen prompted further negotiations and the year after, at COP16 in Cancun, further guidance was agreed stating that REDD+

should be implemented in phases, beginning with the development of national strategies or action plans, policies and measures, and capacity-building, followed by the implementation of national policies and measures and national strategies or action plans that could involve further capacity-building, technology development and transfer and results-based demonstration activities,²⁶ and evolving into results-based actions that should be fully measured, reported and verified. (UNFCCC, 2010b: 13)

After the BAP in 2007, the Forest Carbon Partnership Facility (FCPF) of the World Bank and the United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing countries (UN-REDD), comprising the United Nations Environment Programme (UNEP), the United Nations Development Programme (UNDP) and

²⁶ By results-based demonstration activities, actual REDD+ projects are designated that sequesters carbon according to strict quantification criteria in exchange for payments.

the Food and Agricultural Organisation of the United Nations (FAO), were established. Collaborating, they provide so-called fast-track funding for the first phase to countries intent on participating in REDD+. In this phase, capacity building and technical assistance are provided by the UN-REDD, the FCPF, and other bilateral and multilateral actors to develop national REDD+ strategies and forest monitoring systems. The second phase involves the implementation of those developed REDD+ strategies as well as results-based pilot activities, with funding support from sources that include bilateral donors and the Forest Investment Programme (FIP), administered by the World Bank (Brown, 2013). The third phase, full scale results-based action, may be reached by 2020, as noted above.

Initiatives tracking REDD+ finance suggest that US \$8.7 billion has been pledged to support the readiness phases of REDD+ between 2006 and 2014 (Norman and Nakhooda, 2014). However, amounts disbursed are lower. Norman and Nakhooda find that donors have deposited 72% of the pledged US \$2.2 billion, whereas multilaterals have only disbursed 11% of the pledged US \$3.1 billion. REDD+ preparations are thus a multi-billion dollar affair and it includes a range of stakeholders. Brown (2013) provides a useful stakeholder list including big international NGOs (BINGOs), such as the International Union for Conservation of Nature (IUCN), the Nature Conservancy (TNC) and the World Wildlife Fund (WWF), which facilitate REDD+ preparations including practical pilot activities.

A variety of research organisations are also involved in REDD+, such as the Woods Hole Research Center (WHRC) and the Center for International Forestry Research (CIFOR). Research organisations often observe the negotiations and produce submissions on various topics. They may also be invited to provide input to workshops under the UNFCCC, and their work, particularly that which is provided by the IPCC, is conferred by REDD+ negotiators and other technical stakeholders throughout the negotiations and the development of REDD+

projects. If the IPCC is often considered an epistemic authority that provides methodologies for carbon monitoring, CIFOR engages more directly with REDD+ in the form of research and analysis, and develops proposals for how to operationalise aspects of REDD+. While the research they (and others) produce may feed into the negotiations, they also adapt their premises according to negotiation outcomes.

Standard setting organisations such as the Verified Carbon Standard (VCS) and the Climate, Community & Biodiversity Alliance (CCBA) are also important REDD+ stakeholders. They operate on the voluntary carbon market that is formally independent from the UNFCCC process. This market is not driven by obligations to reduce emissions, but rather by principles such as corporate social responsibility. It includes specific REDD+ projects produced through methodologies and directives that are influenced by the developments at the UNFCCC. While currently unclear, it is possible that such projects will be subsumed under the UNFCCC regime in the future. The VCS and the CCBA are two popular developers of such methodologies and directives, so-called standards. The VCS focuses on technical aspects and the CCBA on more social and ecological aspects. The market was valued to US \$395 million in 2014 (Hamrick and Goldstein, 2015).

Another key stakeholder is implementing states and forest users within those states. States undertake preparations with the support of the above mentioned stakeholders and in collaboration with forest users,²⁷ while also partaking in the negotiations to develop REDD+. REDD+ is implemented in forests and may affect between 600 million (TVE/UN-REDD, 2009) and 1.6 billion forest users (IUCN 2012). While such a number of people harbour an immense diversity, they are in UNFCCC discourse framed as ‘local communities’ and ‘indigenous peoples’ (Thompson et al., 2011). They enjoy a certain amount of representation in the UN-

²⁷ The amount and form of collaboration is a contentious issue and the requirement of participation is a negotiation topic considered in the next chapter.

REDD, the FCPF and in UNFCCC negotiations (ibid.), and some organise in peasant farmer movements and rights-based advocacy groups. The most vocal peasant farmer movement opposed to REDD+ is the La Via Campesina with its 200 million members (Brown, 2013).

These developments demonstrate that REDD+ is not solely rendered governable through the UNFCCC negotiations. Advanced pilot activities are in place and a voluntary market includes REDD+ projects with methodologies similar to, but not the same as, those developed under the UNFCCC. Reducing emissions from deforestation has in other words already been rendered governable. Project developers and market participants perceive that forests can be represented as carbon quantities through procedures that are deemed advanced enough to facilitate carbon trading, which is to say that the issues of additionality, permanence and leakage are considered in a different light compared to the CDM negotiations. However, these projects are not immersed in a compliance market as a future REDD+ may be. The regulatory measures to decrease emissions in Annex 1 countries that creates a demand for offsets are supplanted with either pilot activities or actors that voluntarily seek to offset carbon emissions.

4.4 Conclusion

This chapter has provided a background for the ensuing analysis by considering climate governance prior to REDD+. It elaborated on the developments constituting the carbon cycle as an object amenable to regulation, and how REDD+ is being considered for regulation because it is a constituent part of this cycle. It also suggested that climate governance resonates with sustainable development and that the governmental ambition has been to reconcile economic growth with ecological sustainability. To enable this synthesis, market mechanisms

have been advanced to regulate greenhouse gas emissions in a cost-efficient manner, as exemplified by the flexibility mechanisms of the KP.

It was also argued that climate governance relies on a mastery of nature, an ability to represent greenhouse gases in more or less exact quantities. The chapter detailed how reducing emissions from deforestation was considered for, but excluded from, the CDM, in part because it was deemed difficult to quantify emission reductions. In other words, the mastery of carbon stocks and flows could not be facilitated for the scheme. A range of technical aspects pertaining to REDD+ were subsequently elaborated. The REDD+ acronym was detailed alongside an explanation of how forest monitoring data is transformed to carbon quantities through IPCC guidance. The design elements necessary for participation in a REDD+ mechanism were also elaborated. A final section briefly considered REDD+ initiatives outside of the UNFCCC, which indicate that reducing emissions from deforestation is already being rendered governable. Taken together, the sections on REDD+ sought to provide the reader with a technical background to REDD+ in preparation for the partly technical analysis to follow. The next chapter starts to analyse those negotiations with a focus on the rationality of REDD+.

Chapter 5

THE RATIONALITY OF REDD+

This chapter analyses how the rationality of REDD+ is constituted. It embarks from the problems that REDD+ seeks to address, and then moves on to consider by what forms of knowledge this is to be achieved. This knowledge is unpacked into the ideas, principles and practices that both legitimise and coordinate governance in REDD+. The chapter thereafter analyses how this rationality was contested throughout the negotiations. In doing so, it addresses the research question: *What is the rationality of REDD+ and how has it been contested throughout the negotiations?*

The chapter is organised chronologically. The first part analyses the rationality from 2005, when REDD+ was first considered, to 2007, when the scheme was included in the Bali Action Plan that was intended to result in a new climate agreement in Copenhagen in 2009. The second part focuses on later years of the negotiations and analyses how the rationality was contested with regards to carbon markets, the positive ecological and social ‘co-benefits’ that REDD+ is meant to facilitate, and an agenda item termed ‘non-carbon benefits’. The analysis of the rationality is facilitated by the three discourse analytical concepts derived from Doty (1993) and detailed in chapter three. Contestation is also examined with the help of those concepts and organised according to the two Foucauldian concepts of *politicisation* and *counter-conduct*. The two concepts are used to partition the manifold challenges to the rationality into a category that accepted the framing of the rationality but challenged some of the assumptions within the forms of knowledge it drew on, and a category that subverted some of the key ideas and principles of the rationality. The chapter concludes by arguing that certain

compromises and adjustments were made to the rationality, but by and large it remained unscathed because many of the challenges were subjugated throughout the negotiations.

5.1 The rationality of REDD+

The rationality of REDD+ has been discussed on numerous occasions in general terms. It has, for example, been suggested that it resonates with sustainable development and that it seeks to address the problems of deforestation and climate change. This section examines the rationality in more detail by considering the early years of the negotiations, from 2005 to 2007, and it commences with the argument that the rationality was manifested in a particular problem formulation and a specific solution to that problem.

The problem in question is that forest owners who aspire to reduce emissions do not have proper incentives to do so. To reduce emissions, forest owners would have to refrain from deforestation. Eco-tourism and other activities that do not jeopardise carbon stocks are permissible, but not harvesting operations, and given that the latter activities are assumed to generate bigger revenue than the former, forest owners can be characterised as providing a global service of mitigating climate change while losing out on potential profits if they decide to conserve forests. Another way of stating this is to say that forest owners incur an opportunity cost by not cutting trees down, which is assumed to incentivise against forest conservation. The solution to this problem is to compensate forest owners according to the opportunity costs they incur, as this is thought to provide incentives to reduce emissions.

While suggested in the academic and grey literature (Eliasch, 2008, Stephan, 2013), this problem formulation was also present in negotiation submissions. The original REDD+

proposal (after it was rejected from the CDM), submitted in 2005 by The Coalition of Rainforest Nations,²⁸ illustrates this rationality perfectly:

[I]n the absence of revenue streams from standing forests, communities and governments in many developing countries have little incentive to prevent deforestation. As a consequence, communities must bear losses of the services from forests that are not currently valued economically, while globally, we must assume the consequences of increased greenhouse gases in the Earth's atmosphere. It is estimated that tropical countries could reduce 1.5 GtC [gigatonnes of carbon] emissions from tropical deforestation over ten years and generate billions of dollars in conservation and climate change mitigation revenue. Without a more complete market valuation, standing forests cannot overcome the economic opportunity costs associated with their conservation. (UNFCCC, 2005: 4-5)

This original REDD+ proposal was a business plan to generate billions of dollars in revenue by reducing emissions from tropical deforestation. However, the problem was that standing forests were not valued economically. To attain revenue, forest owners had to consider alternative activities based on tangible economic valuation. Communities and governments thus had little incentive to conserve their forests. The proposal therefore called for a market valuation of standing forests. They had to become commodities just like harvested forests are commodities; only then could economic opportunity costs be overcome.

Markets were argued to be a suitable device to provide such a valuation and, in corollary, revenue. A carbon market necessitates that regulatory measures are instituted to integrate reduced emissions from deforestation in a regime that allows Annex 1 countries to meet a part of their commitments to reduce emissions by investing in offsets. A regulated offset market, similar to the CDM mechanism discussed in the previous chapter, was assumed to create a demand for offsets produced through reduced deforestation, which in turn would facilitate an

²⁸ This coalition included at the time: Bolivia, Central African Republic, Chile, Congo, Costa Rica, Democratic Republic of Congo, Dominican Republic, Nicaragua, and Papua New Guinea.

economic value for standing forests. As detailed below in this section, this was also assumed to promote sustainable development and biodiversity conservation.

According to submitted negotiation positions, almost all states and the majority of NGOs were strongly in favour of integrating REDD+ in carbon markets. One of few notable exceptions was Brazil who favoured the consideration of REDD+ under the UNFCCC, but disapproved of using it as an offset mechanism (UNFCCC, 2006d, e). The submissions in favour provided several arguments in support of REDD+. One such argument was that there is an increased urgency to mitigate emissions of greenhouse gases in order to avoid potentially radical climatic effects, and deforestation is responsible for a considerable part of those emissions. When giving this argument, certain Parties cited emission figures where deforestation was responsible for between 20-25% of total carbon dioxide emissions, while others cited figures between 10-25% (UNFCCC, 2006d, e). Another argument, delivered in the same urgent tone, was given by the Congo Basin Countries:²⁹ '[a]ny delay in addressing emissions from deforestation is counterproductive for pursuing the objective of the UNFCCC and will increase the costs of climate change mitigation unnecessarily' (UNFCCC, 2006d: 75). This group of countries thus argued that the longer countries stall efforts to address climate change, the more expensive it will become to tackle the issue.

A year later when states made further submissions to the UNFCCC on REDD+, Sir Nicholas Stern's review of *The Economics of Climate Change* (Stern, 2006) was frequently cited. In this review, reducing emissions from deforestation is seen as urgent, cost-effective and as providing co-benefits in biodiversity conservation. Malaysia, for example, 'share[d] the view elaborated in the Stern Review ... that curbing deforestation is a highly cost-effective way of reducing greenhouse gas emissions while at the same time helping preserve biodiversity and

²⁹ A coalition of countries that at the time comprised: Gabon, Cameroon, The Central African Republic, Chad, Congo, The Democratic Republic of the Congo and Equatorial Guinea.

protecting soil and water resources’ (UNFCCC, 2007c: 64). Stephan (2013: 86) has considered the importance of this review and while it was ‘the first major report that argued that investing in early action against climate change would be, by far, cheaper than facing the costs of not acting’, it surfaced after REDD+ was reconsidered. The report thus strengthened existing ideas as it provided what was considered hard scientific facts produced by a respected economist.

However, further arguments were presented in support of REDD+ before the ‘Stern review’. One argument was that REDD+ could reconcile the gulf in emission reduction commitments between Annex 1 and non-Annex 1 Parties. With the KP, no emission cuts were assigned to non-Annex 1 countries and this was based on the principle of *common but differentiated responsibilities* (CBDR) that is enshrined in the Convention:

The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof. (United Nations, 1992: 4)

While highly politicised (Friman, 2013), the concept suggests different responsibilities to mitigate climate change for Annex 1 and non-Annex 1 countries, based on factors such as historical emissions and present capabilities to address emissions. REDD+ was, however, advanced to provide a foundation for non-Annex 1 countries to also contribute to the global problem of climate change. In their original proposal, the Coalition of Rainforest Nations argued that ‘[a]s developing nations, we are prepared to stand accountable for our contributions towards global climate stability, provided international frameworks are appropriately modified, namely through fair and equitable access to carbon emissions markets’ (UNFCCC, 2005: 7). Phrased differently, non-Annex 1 countries were willing to reduce forest loss through monetary

compensation, and this was viewed as taking responsibility and contribute towards climate stability.

Carbon markets were again advanced as the enabler of such emission reductions. That such markets only provide incentives based on offsets where reduced emissions are emitted elsewhere was not emphasised. However, many submissions stressed that Annex 1 countries should commit to ‘deeper’ emission reductions so that offsets do not constitute the majority of reductions. Such commitments, it was argued, would ensure that emission reductions from REDD+ are ‘truly additional’ (UNFCCC, 2007f: 8). A blueprint of an emission reductions regime was therefore advanced in which a set of countries reduced deforestation and where another set paid for those reductions, and in exchange emitted domestic greenhouse gases based on those payments. On top of this was the idea that paying/emitting countries would undertake further emission reductions domestically. Together, this was thought to contribute towards global climate stability and was therefore viewed as a strong argument in favour of REDD+.

Moreover, and as indicated above, REDD+ resonated well with sustainable development because it promised to offer benefits additional to greenhouse gas mitigation in the form of biodiversity conservation as well as poverty reduction and economic development. This ‘win-win’ postulate was broadly supported by both Parties and non-state actors, either as something that would automatically occur, or something that should be promoted through REDD+. The EU, for example, ‘believe[d] that reducing deforestation can result in significant benefits (water, air, soil, plants, animals, livelihoods, biodiversity etc.) to developing countries at national and local levels’ (UNFCCC, 2006d: 9). After the ‘Stern review’ was published, the certainty with which co-benefits were believed to result from REDD+ increased. For example, a submission by six countries of the Congo Basin cited the Stern Review to argue that 5-10 billion US dollars will be required yearly to provide conservation incentives for REDD+, and

that '[r]evenues at this scale could catalyze monumental gains towards the achievement of climate stability, poverty reduction, biodiversity conservation, global environmental security, food security and sustainable development' (UNFCCC, 2007c: 39). The same positive correlation was repeated in numerous submissions. How this correlation was constituted was, however, usually left undefined. That is, in what ways, and for whom, poverty reduction and food security will be facilitated was often not elaborated.

Certain submissions deviated to some extent and framed co-benefits as an aspiration rather than automatically resulting from REDD+. For instance, Indonesia argued that from a 'sustainable development point of view', REDD+ '*should* promote conservation of natural forests and biological diversity ... local community benefits, benefit sharing, capacity building, and technology transfer' (UNFCCC, 2006d: 90, emphasis added). Such a phrasing suggests that the ecological, economic and social trinity of sustainable development is a goal that should be achieved rather than an assumed result of REDD+. Most submissions therefore argued that REDD+ either *will* or *should* be a mechanisms directly congruent with sustainable development.

While uncommon in the first years of the negotiations, one state and several non-state submissions directly cautioned that REDD+ could lead to what is often called 'perverse' incentives or practices, by which is designated a range of negative consequences. Friends of the Earth International (2006: 1), for example, noted that '[p]erverse practices like replacing old, biologically valuable forests with secondary forests and plantations or displacement of indigenous people must not be allowed'. Friends of the Earth critiqued the idea that biodiversity conservation is a naturally occurring benefit of REDD+ and argued that it depends on the approach taken when conserving forest. For example, if conservation is achieved through plantations of fast-growing energy crops at the expense of primary forests, the impact on

biodiversity may be negative. Moreover, instead of being certain that REDD+ will promote benefits for forest users, Friends of the Earth drew attention to the very complex issues around tenure rights and the rights of the different forest users, residents and owners, including Indigenous Peoples, and how those rights may be affected by the institution of REDD+. The betterment of their conditions, Friends of the Earth implied, should not be presumed as the notion of co-benefits often suggests.

The Global Forest Coalition (2007: 2-3) was more critical and turned the co-benefit postulate on its head with the argument that '[p]ayment for environmental services schemes and other market-based conservation mechanisms ... tend to create significant negative social impacts, as they further marginalise women, Indigenous Peoples and other social groups that already have a marginal position in the market economy'. This statement directly critiques the market-based mechanism celebrated by most Parties and non-state actors as the primary vehicle in order to cost-efficiently reduce deforestation while promoting a range of co-benefits. Moreover, the Global Forest Coalition highlighted that the negative impacts of REDD+ can be gendered and lead to the marginalisation of women.

Generally, the few submissions not convinced that REDD+ would lead to co-benefits applied a different field of visibility than the positively inclined majority. Instead of talking in the abstract about terms such as poverty alleviation and biodiversity conservation without specifying how that would result from REDD+, the cautious or critical submissions focused on diagnosing issues pertaining to particular conservation practices or actor constellations in forests to explicate potential issues related to tenure rights, gender and biodiversity. It should be restated, however, that such sentiments were marginal, in particular with regards to state submissions. REDD+ would, either automatically or through unspecified policies, be a policy mechanism that improves ecological, social and economic conditions. REDD+ thus followed

closely from how climate governance was sketched in the previous chapter. It assured that negative ecological trends in greenhouse gas emissions and biodiversity loss would be mitigated. It would also be cost-efficient for Annex 1 countries while rewarding non-Annex 1 countries with substantial revenue for their efforts.

REDD+ therefore resonated with the concept of sustainable development and this was a form of knowledge legitimising the rationality. Another, related, form of knowledge was the economic theorising, originating in resource economics, which has constituted carbon markets as suitable devices to coordinate payments and carbon credits, and cater for cost-effective climate change mitigation. Those were two related forms of knowledge legitimising and coordinating the rationality of REDD+. However, the core of this rationality was both the specific problem formulation that forest users lack economic incentives to conserve their forests, and the proposed solution to compensate them according to incurred opportunity costs.

Post-structural climate governance scholars have categorised environmental discourses, and the rationality of REDD+ dovetails with the discourse often termed *ecological modernisation* (Bäckstrand and Lövbrand, 2006, Nielsen, 2013). It is a discourse that sees environmental issues as challenges that can be solved through economic incentives and technological innovation rather than command-and-control policies. Environmental issues are not understood to be caused by unsustainable resource extraction and consumption patterns that are inherent in modern capitalism, but by a failure to internalise the costs of such behaviour. Ecosystems provide services and if such services are made intelligible in monetary terms, rational market actors can be put under pressure to adjust their behaviour accordingly. For REDD+, this internalisation was to be facilitated by applying a monetary value to the service that forests provide in terms of reducing emissions. This was based on a technical accounting framework enabled by inscription devices monitoring forests, analysed in detail in chapters

seven and eight, which represents forests as carbon quantities. Such mastery is required because it facilitates an understanding of the value forests provide and a bridge to using REDD+ as an offset mechanism, which is the economic motor assumed to deliver payments and co-benefits to forest users, and cost-effective carbon credits to Annex 1 countries.

The rationality therefore embodied a representation where all actors participating in REDD+ would benefit, and this was an understanding supported by the majority of submissions analysed in the above. The few critical submissions dug deep into the political economy of implementing countries to highlight perverse ecological consequences, asymmetrical power relations and issues regarding tenure rights. The rationality, however, embodied forms of knowledge placed at a theoretical and rational level where such issues are not articulated because they are imperfections not part of the theoretical postulates legitimising and coordinating REDD+. On this level, adamantly maintained by most submissions, it theoretically follows that emissions will be reduced cost-effectively and co-benefits promoted if Annex 1 countries take on deeper commitments to reduce emissions, and if some of those emissions are reduced through offsetting.

Nielsen (2013: 11) argues that the ecological modernisation discourse ‘arguably represents a dominant thinking and policy practice in the negotiations on REDD+’, which is in line with the argument of this section, but he also argues that the ‘very technical level of REDD+ makes it hard to voice different story lines to compete with the science of the discourse’. What Nielsen argues is that it may be difficult to challenge the panacea that REDD+ offers since it is based on a very technical vocabulary and economic models that are hard to scrutinise. However, this rationality became increasingly contested from 2007 and onwards, and this is analysed in the remainder of this chapter.

5.2 Politicisation and counter-conduct

The rationality became increasingly contested throughout the negotiations. This and the following section analyse how both markets and offsets were called into question, and a subsequent section considers the impact this had on negotiation outcomes. The concept of *politicisation* is utilised in this section to consider those forms of criticism that sought to directly ‘compete with the science of the discourse’, to again quote Nielsen (2013: 11). That is, the problem formulation of the rationality, as well as its proposed solution were accepted, at least for the sake of the argument, but some of the assumptions within the forms of knowledge it drew on were challenged.

The rationality represents markets as a system promoting emission reductions where they are most cost-efficient, and as providing necessary finance for those reductions. Possible issues with markets were seldom articulated in submissions supporting market-based carbon trading. However, a range of critical NGOs sought to highlight such issues. One such issue was ‘the risk of market monopolisation’ that can occur because ‘offset purchasers seeking low-cost low-risk opportunities would likely cluster around the one or two countries with traditionally high rates of deforestation who could deliver reductions on a continuous basis’ (Greenpeace, 2009: 5). Market actors are assumed to seek the cheapest investment opportunities at the lowest risk, and this is argued to make offset investments unattractive in many countries. This may result in a diversion of investment funding from such countries, which in turn jeopardises participation in REDD+. When making such arguments, it was not uncommon to refer to the CDM market under the Kyoto Protocol, where most CDM project developers have omitted the countries categorised as least developed (LDCs) (e.g. UNEP-DTU 2015). Those past

experiences were thus used to argue that not all countries may have equal access to REDD+ markets (UNFCCC, 2014c).

It was also argued that ‘market mechanisms ... are exceedingly difficult to participate in or benefit from for those without the necessary investment capital, expertise, education or personal contacts’ (GFC 2011: 2). The argument here is not that market actors will omit to invest in certain countries, but rather that those investments will primarily go to actors with suitable knowledge, skills and resources within countries, while excluding those with fewer resources. This could have the consequence that markets end up benefitting ‘investors, brokers and private corporations’, but ‘not indigenous people and forest dependent communities’ (Accra Caucus, 2008: 2). These submissions argued that markets create winners and losers, and that markets may perpetuate differences between the two categories: those disempowered may be further disempowered through markets mechanisms. They also questioned whether market imperfections can be solved through the negotiations because the articulated issues relate to matters of political economy and capabilities within countries beyond the direct purview of negotiators.

Market actors were, however, seldom represented as greedy or dishonest. The problem instead resides with the ‘inherently volatile’ (Global Witness, 2008: 3) market structure in which they are situated, which is prone to imperfections and promotes a behaviour that can be harmful for both states and forest users. This critique was mainly confined to NGOs for several years, but was later appropriated by a group of nearly fifty LDC countries. Nepal, writing on behalf of this coalition, argued in 2014 that ‘LDCs are unlikely to have access to market-based approaches due to a variety of reasons ... [including] inadequate capacity, lack of quality data, and high upfront and transaction costs’ (UNFCCC, 2014c: 2-3). The LDCs thus agreed with the argument that countries with reduced capabilities can be excluded from market

participation. They therefore favoured ‘non-market-based approaches’ that ‘have a more universal uptake ... [and] are driven by climate change outcomes rather than market interests’ (UNFCCC, 2014c: 2).

These actors highlight a range of imperfections with regards to market structures that were not well articulated in the previous section examining the rationality. Those imperfections were argued to negatively affect economically poorer countries and local forest users. Forms of knowledge were thus advanced that questioned the legitimising idea of the rationality that REDD+ will result in positive co-benefits for all participants. The issues resided with what has been called the coordinating idea of the rationality, which is its assumption that carbon markets are optimal allocation systems, providing cost-effective carbon credits to Annex 1 countries, and payments to non-Annex 1 countries and their forest users. The issues with markets were understood to be so serious that it was considered more suitable to support forest conservation through public funds that are less dependent on the investment decisions of market actors. A fund-based approach was not advanced as a cure to all issues, but to counter market monopolisation, volatility and uneven access (UNFCCC, 2014c). The impact this criticism had on the negotiations is considered in the section that follows after the next. The following section, however, considers a form of critique that did not remain within the framing of the rationality.

5.2.1 Counter-conduct

Some of the objections to markets and offsets were not concerned with how markets could lead to adverse outcomes for certain actor constellations. Rather, markets were rejected irrespective of how they would affect the actors partaking in REDD+, or whether they would facilitate cost-

effective emission reductions. This differs from the above concerns because it subverts the key ideas of the rationality instead of pointing out omitted imperfections within those ideas.

When Parties started considering REDD+ as part of the BAP in 2007, certain Parties and non-state actors early on declared that REDD+ should not include offsetting. As one of those Parties, Brazil concisely stated that their proposal for REDD+ ‘is not a mechanism that could be used by Annex 1 countries to meet their quantified greenhouse gas emission limitations and reduction commitments’ (UNFCCC, 2008c: 27). Later in the negotiations, further countries and a large number of NGOs shared the stance of Brazil, including the bloc of BASIC countries (Brazil, South Africa, India and China) (DEA 2013). A portion of those actors premised this rejection of offsets with the argument that Annex 1 countries have a historical responsibility to reduce emissions domestically rather than outsource them via offsets.

The Rainforest Foundation UK (2012: 7), writing together with 12 other NGOs, argued that ‘global carbon markets do not deliver climate justice – a just solution to the climate crisis would not see industrialized countries meet their emission reduction obligations by buying REDD credits in the global South’. This NGO coalition argued that Annex 1 countries have an obligation to reduce emissions domestically and that it would be unjust to engage in offsetting irrespective of whether this is cost-efficient or not. They thus upheld climate justice over potential cost-efficiency, which is a normative concept unlike the rational concept of cost-efficiency. In other words, they subverted the rationality by replacing its legitimising principle of cost-effective emission reductions with the normative principle of climate justice.

Offsetting depends on the creation of carbon credits, a commodity produced through carbon quantification and the economic valuation of those quantities. Another form of contestation took its point of departure in this production of carbon commodities through REDD+, and directed it towards capitalism and its tendency to value ecological resources in

monetary terms. This view was unexpectedly championed by Bolivia. When Parties initially considered REDD+ in 2006, Bolivia, alongside six other non-Annex 1 countries, favoured the consideration of ‘market mechanisms and instruments, like markets for carbon offsets, as a means to stimulate action to reduce emissions from deforestation in developing countries’ (UNFCCC, 2006d: 29). Two years later, however, Bolivia argued that ‘there can be no role for the market and market-based mechanisms in addressing climate change’ (UNFCCC, 2008d: 106). They later argued that ‘[t]he carbon market has become a lucrative business, commodifying our Mother Earth. It is therefore not an alternative for tackl[ing] climate change, as it loots and ravages the land, water, and even life itself’ (UNFCCC, 2010a: 34).

Certain submissions by Indigenous Peoples’ organisations shared similar sentiments. They used the same terminology and ‘oppose[d] the commercialization and commodification of forests’ (IIPFCC 2009: 6). This was followed by a recommendation for ‘Parties and other key actors to be educated to understand the different, holistic world view of indigenous peoples and to understand the different values that forests have for indigenous peoples and for humankind’ (IIPFCC 2009: 6). This submission argued that there are better ways to value forests than as commodities. However, policy makers and other key actors were articulated as lacking the relevant knowledge to undertake such non-economic valuations.

Whether this view had an origin in recent domestic politics (e.g. Webber, 2011), or is derived from a longer tradition, it rejected the dependence of the rationality on economic valuation and commodification. This form of counter-conduct was aimed at the very core of the rationality, which is its problem formulation that standing forests are not valued economically. The problem, in this understanding, is not that standing forests are not valued, but rather that REDD+ tries to construct such a valuation, because this would be to reduce ecological objects to little more than ‘resources to be exploited’ (IIPFCC 2009: 2). This counter-conduct thus

sought to subvert the problem formulation of the rationality and replace it with what may be termed eco-centric principles in which forests are not articulated as commodities.

Economic resources may, however, be required to facilitate forest conservation, but this should not be based on commodification and market-based trading. Bolivia instead favoured fund-based arrangements aimed at strengthening the knowledge and practices of Indigenous Peoples, supported by '[p]olluting countries' that 'have an obligation to carry out direct transfers of the economic and technological resources needed for the restoration and maintenance of forests' (UNFCCC, 2010a: 33). The impact of this critique is discussed in the following section.

5.2.2 Modifying the rationality of REDD+?

The rationality was challenged, both by those who argued that it disregards market imperfections and those who rejected particular principles underpinning the rationality. It was broadly agreed that it is an imperative to reduce forest loss, but conservation should be incentivised by public funds supported by Annex 1 countries, not markets and offsets. However, many non-state actors, non-Annex 1 Parties and the overriding majority of Annex 1 Parties still supported both markets and offsets. What has emerged amidst this tension is a 'patchwork' funding structure where markets have been joined by alternative fund-based approaches. However, it is challenging to disentangle the importance of the critique for promoting this 'patchwork', not least because the failure to adopt climate agreements, for example in Copenhagen, has likely also encouraged Annex 1 countries to disburse public funds to support REDD+ initiatives.

REDD+ may be included in a new climate agreement, and this agreement may permit markets and offsets. Negotiators have since Copenhagen, nonetheless, developed a Green

Climate Fund ‘as an operating entity of the financial mechanism of the Convention’ (UNFCCC, 2010b: 17) that will play a ‘key role’ for REDD+ finance (UNFCCC, 2013c: 24). The fund is based on an ambition from Annex 1 countries to commit US \$100 billion annually by 2020 for mitigation and adaptation activities, and US \$10 billion had been mobilised by 2015 (United Nations, 2010, 2015). It is likely to disburse a part of its finance to REDD+ and to exclude offsets. It will be results-based, which means that finance channelled through it should be based on emission reductions that are monitored according to the regime described in the previous chapter, and which will be analysed in further detail in chapters seven and eight (UNFCCC, 2013c).³⁰

The role of the fund for REDD+ is as of 2015 not clear and dependent on whether the ambition to commit US \$100 billion annually is achieved, and how much of those funds are allocated to REDD+. This fund may, however, not appease countries such as Bolivia who articulated an anti-capitalist discourse, because the results-based character of the fund necessitates an economic valuation of conservation progress and a disbursement of funds according to that progress. Bolivia instead advanced a ‘Joint mitigation and adaptation’ mechanism based on non-market and non-offset principles that was later agreed in the SBSTA as a draft decision awaiting COP adoption in late 2015 (UNFCCC, 2015b).³¹ The mechanism is stated to be an alternative to results-based finance and this means that finance will likely not be directly linked to ex-post results in terms of carbon quantities. The same decision also encourages the Green Climate Fund and other finance entities to ‘provide financial resources’ to the mechanism, but it does not elaborate on the criteria for disbursing such finance (UNFCCC, 2015b: 2). How the mechanism will work in practice has not been detailed at length,

³⁰ For further information on the Green Climate Fund, see: (GCF 2015).

³¹ For further information on Bolivia’s REDD+ proposal, see references cited when discussing Bolivia in this section, and UNFCCC (2014b).

but it should include forest monitoring mechanisms and contribute to achieving emission reductions through forest conservation.

Respondents were hesitant to interpret this trend away from markets and offsets, but they acknowledged the leading role played by Bolivia (NGO Interview, 2013a) and stressed that these alternative approaches rely on public funding disbursed without carbon credits in return (NGO Interview, 2013h). Commentators evaluating the willingness of Annex 1 countries to disburse funds on such a basis are pessimistic. It is assumed that if ‘offsetting were not allowed, it would not be possible to keep the current level of funding’ (Hein et al., 2015: 3). It is thus expected that Annex 1 countries will only finance forest conservation projects, whether they are integrated with adaptation components or not, if such finance results in carbon credits.

Markets and, in particular, the idea of cost-effective offsetting, which made REDD+ so attractive for Annex 1 countries, is under challenge from a number of Parties, including the bloc of BASIC countries. Nepal, writing on behalf of the LDCs, stated in a submission that ‘until recently’, market-based mechanisms have ‘been considered to be the only available option for REDD+ financing’, but non-market approaches have surfaced ‘as an opportunity’ (UNFCCC, 2014c: 3). The analysed critique has been part of challenging the use of markets to create this opportunity. It did so by articulating a range of market imperfections that were silent in the theoretically elegant rationality, and by drawing on normative, anti-capitalist and eco-centric principles not embodied in the rationality.

A new mechanism not dependent on markets or an economic valuation of forests has been developed through the negotiations, likely propelled by the analysed efforts to subvert the rationality. However, the impact of this mechanism remains to be seen, because its viability is dependent on sustained financial assistance from Annex 1 countries that broadly support the rationality and its reliance on carbon markets. This also suggests that the attempts to subvert

some of the principles of the rationality did not affect the mind-set of most negotiators shaping the rationality throughout the negotiations. The next section analyses further challenges to the rationality, and it is suggested that the impact of those challenges are more readily apparent.

5.3 Co-benefits and safeguards

The idea that social and ecological benefits will be promoted through REDD+ was one of the key aspects that allowed the scheme to garner broad support among both Parties and non-state actors. It is a constituent form of knowledge that legitimises the rationality. However, this idea became increasingly questioned, and different approaches to ensure that co-benefits are realised were strongly debated topics within the negotiations. These negotiations concerned both ecological aspects, such as the effects of REDD+ on biodiversity conservation, and social aspects, which is a broad category including economic, cultural and juridical elements. Both aspects resulted in a set of ‘safeguards’ that are meant to make sure that co-benefits will materialise. This section analyses a portion of those broad negotiations.

A common concern was that REDD+ could have negative impacts on biodiversity. One of the issues was that REDD+ could permit the replacement of natural forests with plantations of oil palm or other crops. Industrial plantations can be lucrative enterprises, but they also sequester carbon, which potentially makes them valid in REDD+ schemes. However, the problem with plantations is that they are often considered less species rich than natural forests (UNFCCC, 2009b). It follows that if plantations were allowed, it could lead to a situation where REDD+ incentivises the depletion of biodiversity in tropical forests. Another problem, but with a similar hypothetical outcome, was that REDD+ could entail a reallocation of deforestation and degradation from ‘high-carbon low biodiversity areas to low-carbon high biodiversity

areas, resulting in net gains in terms of climate but losses in terms of biodiversity' (Greenpeace, 2009: 5). The argument here is that REDD+ may incentivise more rigorous conservation initiatives in areas with high carbon values, while detracting attention from those areas that are species rich but less carbon dense. This situation could also lead to a potential depletion of biodiversity.

These arguments politicise the rationality by drawing on forms of knowledge not articulated within its legitimising ideas. They suggest that REDD+ may produce ecological trade-offs; while emissions are mitigated, biodiversity may be threatened. Many states and NGOs consequently argued that 'biodiversity and ecosystems should be taken into account when formulating and implementing activities aimed at tackling deforestation and forest degradation' (UNFCCC, 2008d: 126). More detailed policy suggestions to introduce specific governance arrangements conducive to biodiversity conservation were also advanced. Norway, for example, argued that it is 'crucial to include safeguards against the conversion of natural forests to plantation forests' (UNFCCC, 2009c: 55). Moreover, some NGOs and the EU argued that REDD+ should move beyond a focus on carbon to directly monitor the effects on biodiversity (UNFCCC, 2008a). These actors, then, sought to actively design REDD+ to account for the consequences on biodiversity and ensure its conservation, which was considered necessary for the scheme to live up to its promise of positive co-benefits. This resulted in more concrete negotiations over an 'ecological safeguard' that is considered after the following paragraphs detailing more 'social' concerns with the rationality.

The negotiations featured an assortment of concerns that REDD+ may end up not benefiting forest users. They include economic, cultural and juridical aspects, but this section exclusively considers the rights of forest users. Rights are helpful to analyse because they are a macro category. Many of those not convinced that REDD+ would be beneficial argued that if

forest users are accorded with strong rights, they stand a greater chance to benefit, or alternatively, to be empowered to reject the scheme if they would not want to participate (e.g. ECA 2009a). Rights are, however, a complex topic with different types being advanced by different actors. For example, the vast majority of actors argued that tenure rights must be clarified, because they are contested in many countries and REDD+ depends on clear property rights to incentivise forest owners to reduce deforestation (UNFCCC, 2009g). Two different forms of rights are discussed here, namely the *United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)* and the *right to participate in REDD+ projects*. The former, it will be argued, is a facilitator of counter-conduct.

Many NGOs and certain states advanced the argument that REDD+ should affirm the UNDRIP. Principles from this declaration include:

- Free, prior and informed consent
- Meaningful participation
- The right to self-determination and self-government
- Equitable benefit-sharing
- Land tenure and land rights
- The right to management and customary use of natural resources. (ECA 2009a: 2)

It was also argued that these rights should encompass all forest users, including Indigenous Peoples and other local forest users. Abiding by the UNDRIP entails, through the principle of free, prior and informed consent (FPIC), that forest users are bestowed rights to choose whether to participate in REDD+. REDD+ also becomes contingent on forest users' customary use of natural resources, if they would choose to uphold such uses.

Switzerland, on behalf of the Environmental Integrity Group³² also sought to have the UNDRIP affirmed because in their perspective,

financial incentives will only dissuade forest owners from degrading and clearing forests if property rights, as well as the human, civil and political rights, including rights of indigenous peoples, women, communities and other possibly marginalized groups in forest areas are recognized. (UNFCCC, 2009i: 2)

Through the UNDRIP a range of rights are upheld, and adhering to them is seen as instrumental if forest users are to conserve forests in return for monetary incentives. One of the assumptions was that without secure property rights, forest users may fear that they will not benefit from REDD+ and therefore favour short-term incentives through deforestation or degradation.

The UNDRIP was also promoted for different reasons. Several non-state actors were highly sceptical of the utility of REDD+. For example, the Coordinator of Indigenous Organizations of the Amazon River Basin argued that

our lands are recognized as more effective in avoiding deforestation and storing carbon than private lands or conservation areas. Without the indigenous peoples' forests climate change will be seriously aggravated. (COICA 2009: 4)

The assertion here is that Indigenous Peoples are suitable forest stewards irrespective of financial incentives through REDD+. Attention should be directed to the real drivers of forest loss, including 'international development finance institutions' that 'must account for the carbon emissions caused by their investments', not Indigenous Peoples who already know how to effectively conserve forests (COICA 2009: 6). Such statements were often followed by arguments that the UNDRIP should be fully adopted and adhered to by Parties to the UNFCCC,

³² This group includes: Mexico, Lichtenstein, Monaco, the Republic of Korea and Switzerland.

so that ‘REDD programmes ... only proceed on indigenous peoples’ lands and territories with their free, prior and informed consent’ (FPP 2009: 1). The argument these actors advanced was that the UNDRIP should not only be affirmed to clarify land rights necessary to coordinate finance with conservation progress, but also to allow forest users to reject REDD+ projects if they so wish.

The UNDRIP may therefore help facilitate clear land rights, which is necessary for REDD+, but it may also grant forest users the legal power to govern REDD+ projects according to their customary use of natural resources, or alternatively to reject REDD+. It empowers forest users and places them on an equal footing with REDD+. Affirming the UNDRIP would give forest users a foundation from which they could state whether they want to be ‘governed ... in the name of those principles, with such and such an objective in mind and by means of such procedures’ (Foucault in Death, 2010: 240). It therefore facilitates counter-conduct, but not necessarily in the sense of subverting the ideas and principles of the rationality. Rather, the UNDRIP challenges the rationality by placing forest users in a position where they must agree before REDD+ governance can unfold, and where they can influence *how* they are governed to a greater extent.

The UNDRIP is helpfully juxtaposed with another, and more broadly supported, form of right, which is the right to participate in the development and implementation of REDD+ projects. An early workshop of the negotiations ‘held that in order for mitigation actions to be effective, participation of stakeholders, local communities and indigenous peoples should be secured’ (UNFCCC, 2008b: 2). The USA similarly argued that ‘[e]ffective implementation and enduring results will only be achieved with an open and transparent process, including broad stakeholder participation and taking into account the needs and interests of local communities, forest dwellers, and indigenous peoples’ (UNFCCC, 2009d: 33).

These statements, which were echoed in numerous submissions, have long histories in the practice and discourse of both development assistance and natural resource management (Cooke and Kothari, 2001, Shackleton et al., 2002), where a central argument for participation is that '[t]here is increasing scientific evidence that forest areas controlled by the local communities that live in and depend on them are less susceptible to deforestation and degradation' (Fern et al., 2008: 2). Accordingly, past experiences show that participation is instrumental for successful forest conservation. It was also argued that participation 'will provide opportunities to ensure that REDD+ activities "do no harm" to the livelihood of indigenous peoples and local communities' (UNFCCC, 2009: 8). Participation was in other words viewed positively both because it makes forest conservation more effective and because it helps ensure that REDD+ activities benefit forest users. Both the right to participate and the UNDRIP were seen as stepping stones to ensure that REDD+ will provide benefits to forest users. However, the right to participate is not a form of right that necessarily grants forest users the right to reject REDD+ projects, which the UNDRIP formally does. These two forms of rights were part of the safeguards negotiations with outcomes analysed in the next section.

5.3.1 Negotiating safeguards

The attempts to safeguard biodiversity and the rights of forest users had a considerable impact on the negotiations, and different forms of safeguards were advanced within the Bali Action Plan that was set to adopt a binding agreement by 2009 in Copenhagen. The Copenhagen negotiations failed to reach an agreement, but the safeguards were adopted when the COP met in Cancun the following year and are formulated as follows:

- (c) Respect for the knowledge and rights of indigenous peoples and members of local communities, by taking into account relevant international obligations, national

circumstances and laws, and noting that the United Nations General Assembly has adopted the United Nations Declaration on the Rights of Indigenous Peoples;

(d) The full and effective participation of relevant stakeholders, in particular indigenous peoples and local communities, in the actions referred to in paragraphs 70³³ and 72³⁴ of this decision;

(e) That actions are consistent with the conservation of natural forests and biological diversity, ensuring that the actions referred to in paragraph 70 of this decision are not used for the conversion of natural forests, but are instead used to incentivize the protection and conservation of natural forests and their ecosystem services, and to enhance other social and environmental benefits. (UNFCCC, 2010b: 26-7)³⁵

There is an ongoing debate regarding the legality of the safeguards. Earlier drafts of the decision have the word ‘shall’ before the safeguards, suggesting that Parties must undertake what they prescribe (e.g. UNFCCC, 2009m). The adopted version, however, states that they should be *promoted and supported*. This begs the question, how obligatory are they? One interpretation is offered in a CIFOR publication, stating that the formulation does not make them ‘rules, which have sanctions associated with failure to comply’, but rather ‘norms or institutions that guide expectations surrounding social and environmental outcomes’ (Jagger et al., 2012). They are ‘non-binding or voluntary’, but they can potentially have practical effects if market actors demonstrate ‘preferences for carbon supplied in adherence with safeguards’ (ibid.). However, the agreement adopting the safeguards also requests Parties to develop a ‘system for providing information on how the safeguards ... are being addressed and respected throughout the implementation of REDD+’ (UNFCCC, 2010b: 13). This safeguards information system (SIS) has been linked to REDD+ finance, meaning that Parties ‘should

³³ This paragraph specifies the different activities of REDD+, such as deforestation and degradation.

³⁴ This paragraph *requests* Parties implementing REDD+ to address the safeguards, land tenure issues, drivers of forest loss, gender considerations and forest governance issues, and ensure the full and effective participation of forest users (UNFCCC, 2010b).

³⁵ Further safeguards were adopted, but they have been excluded as they do not directly pertain to the analytical topics.

provide the most recent summary of information on how all of the safeguards ... have been addressed and respected before they can receive results-based payments' (UNFCCC, 2013c: 24). However, the decision only requests that information is provided, not that certain standards are upheld with regards to the different safeguards. This suggests that payments can be provided irrespective of performance as long as information is communicated specifying how they are addressed and respected.

The content of the safeguards indicates that the critique of the rationality had some purchase with the negotiators. The arguments to safeguard biodiversity were successful in the sense that many objectives were included, such as to promote and support actions consistent with the conservation of natural forests and biodiversity, and to prohibit the conversion of natural forests to plantations. Including these statements also means that the assumption of naturally resulting co-benefits embodied in the rationality was challenged, because Parties are urged to undertake specific actions to conserve biodiversity and avoid converting natural forests to plantations, directly suggesting that there are scenarios in which REDD+ has the potential to be ecologically harmful. The first part of this chapter illustrated that such scenarios were not articulated within the rationality, which means that new forms of knowledge was incorporated throughout the negotiations. However, while the safeguard is written in a decisive language, it only needs to be promoted, supported and subsequently reported; no particular standards must be upheld. It is for that reason uncertain to what extent the safeguard affects how REDD+ will be governed. This uncertainty stems from the subjugation of those proposals that sought to institute obligatory safeguard requirements with monitoring of the effects on biodiversity, because such requirements would to a greater extent ensure that the safeguard has an impact on governance.

The other safeguards specify that the rights, knowledge, and full and effective participation of forest users should be promoted and supported. It is also ‘noted’ that the United Nations General Assembly has adopted the UNDRIP. A different paragraph (in footnote 34 above) *requests* Parties to ensure the full and effective participation of forest users, and to address land tenure issues. The ‘noting’ of the UNDRIP is the weakest of these different statements according to NGO respondents. While one argued that the safeguard ‘does not explicitly incorporate it’ (NGO Interview, 2013f), another argued that the ‘UNDRIP was really diluted into a meaningless reference’ (NGO Interview, 2013b). Those that aimed to facilitate the participation of forest users and to clarify tenure rights were more influential than those seeking to have Parties affirm the UNDRIP, because participation and tenure are stated in a separate paragraph that Parties are *requested* to abide to.

As argued earlier, participation and clear land tenure arrangements are instrumental for REDD+. The former increases the effectiveness of forest conservation and the latter is the foundation on which to incentivise forest owners to conserve forests. Affirming the UNDRIP could also promote such outcomes because it would ensure that REDD+ projects only proceed with the approval of forest users, and based on their knowledge and practices if requested. Hence they could participate in project development and land issues would have to be clarified. However, the UNDRIP also allows forest users to reject REDD+. It places them on an equal footing with REDD+ and enables them to prevent the unfolding of the scheme on their lands.

Respondents provided suggestions to why the reference to the UNDRIP was diluted (NGO Interview, 2013b, Party Interview, 2013g). One state respondent argued that the UNDRIP was not favoured because if ‘one indigenous person is against it [a REDD+ project] they can block anything’. This ‘will kill the whole REDD+ thing, and it will maybe kill our efforts to protect the forest which is also not good for indigenous peoples’ (Party Interview,

2013g). Certain Parties were, in this understanding, opposed to affirming the UNDRIP because it could entail that REDD+ is stopped from penetrating into certain forest areas. This, in turn, would create a 'patchy' REDD+, where forest conservation is not incentivised in all forests, which is considered to hinder or 'kill' efforts to reduce forest loss. Forest users should thus participate in REDD+ projects because it would make them more sustainable and effective. However, they should not be allowed to reject them based on the guidelines adopted at the UNFCCC, since it would not be 'good' for them. The attempt to place forest users on an equal footing with REDD+ was therefore not effective. Instead, forest users are placed in a subject position where they are disempowered while the nation states instituting REDD+ schemes are empowered. REDD+ thus embodies a hierarchy where projects sequestering carbon are given priority over the rights of forest users to reject such projects.

The outcomes of the safeguards negotiations incorporated new forms of knowledge into the rationality. This knowledge was drawn from the discourses of development assistance and natural resource management in which participation is assumed to benefit residents and recipients, but also to increase the effectiveness of initiatives. The other form of knowledge concerned tenure rights, which is a cornerstone of liberal economics (Clarke, 1991). It is often argued to be 'key to effective forest management' (Stern, 2006: xxvi) and assumed to mitigate 'potential risks of land grabbing by outsiders and loss of local user rights to forests and forested lands' (Larson et al., 2013: 678). Clear tenure rights were presupposed within the rationality and its perfect market conditions, but knowledge regarding its contested nature resulted in directives to request that conflicts and disputes are clarified.

This means that the forms of knowledge allowed to influence the rationality were those assumed to strengthen REDD+ and make it more effective, whereas those that could prevent the unfolding of REDD+ were subjugated. This safeguard may affect REDD+ governance to

clear up land disputes and ensure that forest users participate in project development. However, how disputes are clarified and participation secured was not further detailed, and the safeguard rests on the subjugation of attempts to allocate stronger rights to forest users through the UNDRIP. The next section analyses another attempt to challenge the idea of naturally resulting co-benefits, this time through the concept of non-carbon benefits.

5.4 Non-carbon benefits: challenging the carbon focus of the rationality

The previous section considered how a range of Parties and non-state actors questioned whether co-benefits will be promoted through REDD+. However, some of those actors objected to the very notion of co-benefits and argued that there is nothing ‘co-’ with these benefits. They are just as important as carbon sequestration and should therefore not be treated as secondary benefits. Those actors had long been dissatisfied with the focus on carbon in the negotiations and were also frustrated with the outcomes of the safeguards negotiations. They renewed their efforts under the agenda item of non-carbon benefits (NCBs) that was considered between 2012 and 2015 (UNFCCC, 2012b). NCBs are thus a recent concept and it has not been formally defined, but supporters of NCBs united in an effort to challenge the focus on carbon in REDD+.

A range of suggestions for how NCBs can be understood were advanced through the negotiations. The COMIFAC³⁶ countries were primary proponents of NCBs and they argued that these benefits may include ‘species richness, household income, (reduced) number of land conflicts, and local perceptions on the cultural services performed by the forests conserved’ (UNFCCC, 2014d: 21). NCBs correspond to some extent with the safeguards in this

³⁶ In the submission in question, the COMIFAC countries comprised: Burundi, Cameroon, Central African Republic, Chad, Congo, Democratic Republic of the Congo, Equatorial Guinea, Gabon, Rwanda and Sao Tome and Principe.

understanding, but with the difference that ‘non-carbon benefits should be properly incentivized and both technically and financially supported and therefore integrated in consideration of results-based finance’ (UNFCCC, 2014d: 20). That is, NCBs are to be economically incentivised, just like carbon. They are as central to REDD+ as carbon is and should not be treated as additional co-benefits. This is unlike the rationality and its idea that carbon sequestration should be exclusively supported with payments while co-benefits should materialise as a positive byproduct.

The safeguards added new forms of knowledge to this elegant theoretical idea and instructed countries to, for example, promote biodiversity conservation and reduce land conflicts. Carbon sequestration was, however, still the primary governance object and other positive aspects were thought to materialise either from the payments and sequestration, or the safeguards. This was challenged with the introduction of NCBs. Carbon should no longer be the centerpiece of the rationality while other aspects are secondary; rather, they should all be governed in unison. This was indicated in a reply from a Party respondent when asked if some feared making REDD+ too cumbersome if NCBs are incentivised:

those are the carbon people. They see the world simply as carbon but the world is not like that, and forests especially are not like that. The whole debate about safeguards and what REDD+ is, is really just a question that can be boiled down to this point, are forest reducible to carbon? And the answer is no. (Party Interview, 2013c)

This statement articulates certain REDD+ actors as ‘carbon people’ that reduce forests to little more than carbon stocks and flows, thereby giving other ecological and social aspects the second-rate ‘co-benefit’ stamp. Carbon people should rethink forest conservation, it was implied, and allow REDD+ to ‘broaden its scope from a highly carbon-focused to a more holistic approach’ (IWGIA et al, 2014: 1). This was considered essential, because omitting the

‘numerous and invaluable NCBs’ that forest users have generated or supported could have the consequence that ‘REDD+ is not possible [to sustain]’ (ibid.). The sustainability of REDD+ projects were, in short, understood to depend on incentivising NCBs.

Sustainability was also considered by a Party respondent, who equated NCBs with forest management. It was argued that ‘non-carbon benefits is not just the cherry on the cake ... it is the cake’, because ‘how you spend the money ... should depend on how serious a country is about changing ... forest management, and the land management in general’ (Party Interview, 2013e). The respondent argued that it is important to incentivise changes in forest management rather than solely focus on carbon sequestration, because payments from the latter can be compromised by a variety of factors, such as the lack of demand for carbon credits or the breakdown of forest governance arrangements. It is therefore sensible to not only pay for emission reductions, but also for the institution of broader forest management strategies to increase governance stability and sustain the livelihoods of forest users irrespective of carbon market performance.

Such arguments were combined with a range of concrete proposals for how NCBs can be both measured and incentivised, where some suggested that a basic tier 1 monitoring system based on IPCC methodologies should be applied for carbon in combination with other assessment criteria for NCBs (NGO Interview, 2013h, g). This would, in effect, be a ‘levelling up’ of NCBs and a ‘levelling down’ of carbon. It would modify monitoring systems since carbon would be one of many aspects monitored. It would create a broad payment for ecosystem services scheme, where the services include ecological and cultural elements, but also aspects related to forest management, and this, according to supporters of NCBs, was the way forward to reduce emissions more permanently.

NCBs did therefore not subvert the problem formulation of the rationality that standing forests are not valued economically. On the contrary, the principal objective of NCBs was to extend this problem formulation beyond carbon to other activities and resources. This is a politicisation of the rationality, where new forms of knowledge were incorporated in which the aims of REDD+ will not be achieved, or can be compromised in the future, if economic valuation and payments are not broadened. A key difference between carbon and NCBs was, however, that the valuation of the latter was not envisioned to result in tangible commodities used for offsetting purposes, which is a key legitimising idea behind the rationality.

However, the opposition to NCBs was large, where many states, particularly from Annex 1, argued that REDD+, in itself, will promote a range of NCBs and should therefore not be separately incentivised (Party Interview, 2013f, UNFCCC, 2014d). This argument is a rehearsal of the ‘win-win’ postulate where additional environmental and social benefits will result from REDD+. However, when given in the context of NCBs, those benefits were stated with increased assertiveness because safeguards were there to make sure that benefits will materialise. Moreover, there were also those arguing that adding ‘cherries and whipped cream and chocolate sprinkles and everything else ... just make things much more complicated’ (NGO Interview, 2013e). Incentivising NCBs is here seen to place additional burdens on REDD+ since it would, for example, necessitate the development of monitoring systems that can account for these benefits.

In this regard, there were many reservations toward NCBs and when a draft decision was agreed in 2015, it largely subjugated the attempt to politicise the rationality. The decision specifies that ‘Parties seeking support for the integration of non-carbon benefits into’ REDD+ activities ‘may provide information addressing, inter alia, the nature, scale and importance of the non-carbon benefits’. Parties could ‘communicate the information ... for consideration by

interested Parties and relevant financing entities’, but NCBs ‘do not constitute a requirement for developing country Parties seeking to receive support’ for REDD+ activities (UNFCCC, 2015c: 2). In other words, Parties are free to implement NCBs and seek financial support for them, but they are not required to do so, and no financing entity is encouraged to support them, which was the case with the non-market mechanism discussed above. NCBs are thus not something that is required, such as participation or land tenure clarification, and not something that should be promoted and supported, such as biodiversity conservation. NCBs are, in other words, not placed in a position equal to carbon. They are instead voluntary secondary co-benefits dependent on financial approval from interested Parties and unspecified finance entities.

NCBs were advanced to broaden the rationality to consider a range of aspects in and around forests on an equal footing with carbon, but the latter remain the primary governance object in REDD+ and the sole object to be valued in monetary terms. The attempt to create a scheme where forest resources and governance activities are economically incentivised without cost-effective commodities in return failed. The rationality therefore emerged unscathed, but this was based on the subjugation of alternative forms of knowledge that questioned whether REDD+ is sustainable in the long term if NCBs are not incentivised. This subjugation of alternatives is further summarised in the concluding section that follows.

5.5 Conclusion

This chapter analysed the rationality of REDD+ and how it was contested throughout the negotiations. It argued that the core of the rationality is both the specific problem formulation that forest users lack economic incentives to conserve their forests, and the proposed solution

to compensate them according to incurred opportunity costs. Standing as opposed to harvested trees are transformed into commodities, and carbon markets are assigned to undertake an economic valuation of such commodities and provide necessary finance. By using markets and offsets, forests are conserved and emissions reduced where it is most cost-effective to do so. This is also assumed to result in ecological co-benefits in terms of biodiversity conservation, and social co-benefits in terms of poverty reduction and food security for forest users. This rationality was, in the first years of the negotiations, critiqued by a few submissions that dug deep into the political economy of implementing countries to highlight perverse ecological consequences, asymmetrical power relations and issues regarding tenure rights. The rationality, however, embodied forms of knowledge placed at a theoretical and rational level where such issues are not articulated because they are imperfections separate from the theoretical postulates legitimising and coordinating REDD+.

The second part of the chapter analysed how this rationality was contested with regards to markets and offsets, co-benefits and non-carbon benefits. The market and offset section analysed how critics highlighted market imperfections and rejected the idea of cost-effective offsetting, and instead argued for non-market mechanisms. One such mechanism was agreed by the SBSTA, but its viability is dependent on the financial support of Annex 1 countries without carbon credits in return, and it is unclear how much such support the mechanism will attain. The co-benefit section analysed challenges to the idea that such benefits will result automatically, as well as attempts to strengthen the rights of forest users and protect biodiversity. This resulted in a set of safeguards that may clear up land disputes and ensure that forest users participate in REDD+ projects. The forms of knowledge allowed to influence the safeguards were those that sought to strengthen the rationality and make it more effective, whereas those that could prevent the unfolding of REDD+ were subjugated. The rationality

therefore places the rights of forest users in an inferior position to carbon sequestration. A final section analysed how the rationality was politicised through the NCB concept, which places a range of non-carbon attributes on an equal footing with carbon in REDD+. However, this attempt was largely subjugated by a negotiation outcome that firmly places NCBs in an inferior position to carbon sequestration.

The rationality was challenged from a variety of perspectives. The creation of a non-market mechanism is the clearest deviation from the rationality, but as stated, the future of this mechanism is as of yet uncertain. The safeguards, on the other hand, strengthens the rationality, and attempts to modify REDD+ to pay for non-carbon benefits were largely refuted. The rationality therefore emerged, to a considerable extent, unscathed from the negotiations. However, this was only possible by subjugating those alternatives that sought to reject the predominant carbon focus of REDD+ and make the scheme conditional on the approval of forest users. The next chapter considers further challenges to REDD+, this time on the topic of drivers of deforestation.

Chapter 6

SELECTIVELY ADDRESSING DRIVERS OF DEFORESTATION IN REDD+

The previous chapter argued that carbon is the primary governance object in REDD+ and that other positive co-benefits are assumed to materialise either automatically or as a consequence of the safeguards. However, carbon is not directly governed through the REDD+ mechanism. Rather, it is the factors that affect carbon trends that are directly governed, the drivers of deforestation and forest degradation. This chapter analyses both what actor constellations are articulated as drivers throughout the negotiations, and what measures will be taken to confront those drivers, thus addressing the research question: *Who are represented as drivers through the negotiations and how will they be governed?*

It has been suggested that REDD+ represents forest users as drivers since they are the actors that will be targeted with payments to increase forest conservation. However, forest users are not a homogenous group. They can include government enterprises, private enterprises of various sizes and constitutions, and subsistence farmers and Indigenous Peoples that can manage forests in different ways. Moreover, actor constellations not owning forests can contribute to forest loss, for example through illegal logging. The same is true for non-domestic actors that are responsible for consuming commodities from forests and agriculture (Kissinger et al., 2012). Omitting some of these drivers may have repercussions for the effectiveness of REDD+, because the pressure they exert on forests would remain and operate in tandem with REDD+ and its incentives to conserve forests. Given the diversity of drivers and the risks associated with leaving them unaddressed, two sections of this chapter analyses what actor constellations were articulated as drivers by Parties and non-state actors throughout the

negotiations. The first section analyses the early years of the negotiations and a later section analyses more recent years. The main argument arising from those sections is that subsistence forest users are articulated as central drivers in REDD+, while drivers outside of countries implementing the scheme were largely subjugated.

In between those two sections, the chapter also considers *how* the drivers should be addressed. However, the interest here is not primarily the practical governance initiatives employed in REDD+, such as payments to compensate for incurred opportunity costs, but rather the ‘forms of subjectivity’ that such initiatives presuppose. Rationalities ‘presuppose particular identities’ (Stephan, 2013: 18) that make the practical governance initiatives logical. Payments approaches presuppose that subjects respond positively and conserve forests when presented with economic incentives. While this may be considered a mundane point, it is made relevant when combined with Foucault’s (1991a, 2008) understanding of subjects’ conduct as malleable. It is assumed that a person’s incentive systems regarding how and why forests should be conserved can alter through sustained interaction (e.g. Vatn, 2010). It will, based on such ideas, be suggested that REDD+ governance could have far-reaching implications for the everyday lives of forest users.

6.1 What drives deforestation in REDD+?

The question of what drivers to address in REDD+ preoccupied negotiators from the very first years of the negotiations. It is a complex question because it is not confined to the problem formulation, and associated solution, at the core of the rationality. This problem is that forest users lack incentives to conserve forests, and the proposed solution is to compensate forest users for incurred opportunity costs when conserving forests, which articulates those forest users as

drivers. While this is the core economic logic of REDD+, negotiators were well aware that it is not only forest users in the immediate vicinity of forests that drive forest loss. Rather, forest users are attached to national and international actors through global commodity chains that incentivise forest loss (Kissinger et al., 2012). Negotiators therefore spent a considerable amount of time discussing both what drivers to address and how to do so. This section analyses what drivers negotiators and non-state actors articulated up to the adoption of the Bali Action Plan in 2007.

A plethora of drivers were articulated during those years. Many non-Annex 1 Parties and non-state actors pointed out a range of factors outside of countries implementing REDD+ that could affect deforestation trends. One set of prominent drivers were biofuel subsidies in Annex 1 countries, including in the EU, which were frequently considered to drive deforestation since they promote further biofuel consumption that is ‘a major cause of deforestation’ (GFC 2007: 2) because it ‘encourage[s] the replacement of rainforests with biofuel crops’ (UNFCCC, 2007f: 52). Other international drivers were also suggested, such as the rising meat consumption in emerging economies, which encourages the conversion of forests to agricultural land in meat-producing countries (WHRC and IPAM 2007). These examples articulate a field of visibility in which the causes of deforestation are in part global and deterritorialised from nation states. Global interconnectedness and increasing demand for biofuels, meat and other products facilitate a flow of commodities from countries implementing REDD+ to other countries. This is beyond the confines of the rationality in the sense that even if forest users are given monetary compensation to conserve forests, the demand for these products would still be in place and compete with the incentives provided through REDD+.

However, the majority of submissions attempted to cut those global links and only consider drivers in a domestic setting. A typical sentiment recognised that the

[c]auses of deforestation operate at various levels, e.g. at the level of local decision-making to the level of global markets. However, deforestation takes place locally and is linked to national circumstances. For this reason, drivers and causes of deforestation can best be identified by the national governments concerned. (UNFCCC, 2006c: 14)

This quote, which comes from an early workshop conducted under the SBSTA, argues that while global markets take part in causing deforestation, drivers are best identified nationally. Bolivia, writing on behalf of 17 non-Annex 1 countries, similarly argued that ‘many drivers of deforestation often vary by country or region. To be effective, developing countries themselves will determine which policy approaches are relevant and where they are to be applied’ (UNFCCC, 2007c: 13). Addressing drivers nationally does not necessarily entail that those associated with global markets are not addressed, because both Annex 1 and non-Annex Parties could address the drivers they are responsible for. However, the crucial difference between the two country groups is that non-Annex 1 countries will receive monetary incentives to address them through REDD+ and no such incentives are available for Annex 1 countries. Annex 1 countries would thus have to address the consumption patterns of their citizens based on a rationale not related to economic incentives, and such ambitions were marginal in their submissions the early years of the negotiations (e.g. UNFCCC, 2006d, 2007c). It follows that responsibility to address drivers is likely placed on states implementing REDD+, despite a recognition that certain drivers are related to Annex 1 countries.

The impression that non-Annex 1 countries will bear the primary responsibility to address drivers was strengthened by a range of decisions taken throughout the negotiations. A 2007 decision *encourages* ‘Parties to ... address the drivers of deforestation’ (UNFCCC, 2007a: 8). It does not differentiate Parties according to annexes, which suggests that all Parties, not just non-Annex 1 Parties, are encouraged to address drivers. However, a decision from 2009 states

that ‘developing country Parties’ are *requested* to ‘identify drivers of deforestation and forest degradation ... and also the means to address these’ (UNFCCC, 2009e: 11). This decision thus exclusively considers non-Annex 1 countries. A further decision was taken the following year, and it includes both annexes since it *encourages* ‘all Parties to ... address drivers of deforestation’ (UNFCCC, 2010b: 12). The difference between the decisions is that the one pertaining exclusively to non-Annex 1 countries uses the stronger word ‘request’, whereas those also pertaining to Annex 1 countries use the more optional ‘encourage’, which suggests that while non-Annex 1 Parties must address drivers, it is optional for Annex 1 Parties to do so.

It is, in this regard, possible that drivers will be exclusively addressed within non-Annex 1 countries. Parties articulated a plethora of such domestic drivers in the submissions. They ranged from forest users securing their livelihoods to much larger operations of commercial significance. Moreover, illegal activities, both small-scale and more substantive operations, were noted as driving deforestation (UNFCCC, 2006d, 2007c). A separation can be made between proximate causes such as fuelwood extraction, harvesting operations and the conversion of forest land for agricultural purposes, and underlying causes that are related to ‘demographic, economic, policy and institutional, technological and/or cultural factors’ (UNFCCC, 2006c: 7). Many submissions made clear that it is not only the direct or proximate drivers that should be tackled, but also the underlying causes. For example, the USA argued that ‘the root causes of deforestation unique to each locality’ must be addressed; ‘[t]he economic, political, and social drivers of deforestation at a particular site must be analyzed in order to tailor responses according to the threats faced in that particular environment’ (UNFCCC, 2006d: 118).

However, both submissions and respondents were concerned that not all drivers can be addressed with the revenue resulting from REDD+. It was acknowledged that opportunity costs

differ depending on forest use, and that '[e]missions that are associated with substantial economic gains probably cannot be offset under current carbon prices' (ICRAF 2007: 3). A NGO respondent elaborated:

If you're trying to displace oil palm in Indonesia or Malaysia then you need a lot of money because it is a very useful crop. So it is not going to be cheap in those countries. ... In other countries it would be cheap. For a lot of Africa it is people getting fuelwood which they can do much more reliably in other ways, so that is very very cheap. (NGO Interview, 2013a)

In other words, the incentives provided through REDD+ may be too weak to incentivise against the conversion of natural forests to plantations of crops demanding high prices on domestic and international markets. Command-and-control policies, supported by the non-obligatory safeguards, could be instituted to prohibit such conversions. However, many countries are dependent on export-led growth strategies and they proclaimed an urgent need to secure economic growth and poverty reduction, which indicates that prohibiting high-value commodities is not a priority. One such argument held that 'Bolivia will be willing to reduce its deforestation rates if ... doing so will not hinder economic growth, will support sustainable development and most of all ... reduce poverty' (UNFCCC, 2006d: 6). Therefore, and as discussed further in the next section, instead of prohibiting such lucrative crops, Parties argued that they would aspire to make them more sustainable.

The indication that high-value commodities are not prioritised in REDD+ is echoed in literature that has considered the effectiveness of opportunity cost compensation on different forest and agricultural activities (Stern, 2006, McKinsey & Company, 2009). As argued in the previous chapter, the Stern report had a big impact on the negotiations in terms of advancing REDD+ as a cost-effective scheme that would result in a range of co-benefits. The same report

also explicates the higher opportunity costs for commercial activities and much lower costs for subsistence forest users. It argues that '[o]il palm and soya produce much higher returns than pastoral use, with net present values of up to \$2000 per hectare compared with as little as \$2 per hectare', thereby illustrating how much cheaper it would be to address pastoralists (Stern, 2006: 217). Stephan (2013: 127) has considered this and argues that 'the opportunity cost approach frames smallholders and subsistence farmers as problematic subjects that REDD+ need to target', and further that 'the singling out of smallholders and subsistence farmers as important targets for REDD+ measures has, so far, been criticised only by a few NGOs'.

Submissions from the early years of the negotiations are in line with Stephan's argument. Only a few sought to direct attention away from such forest users. In one example, however, the UNEP's World Conservation Monitoring Centre argued that 'land clearance by the poor is often mistakenly identified as the driver of deforestation, when other factors may be more important' (UNFCCC, 2007e: 37). This argument does not directly counter the opportunity cost logic of targeting subsistence forest users. Rather, it chooses to focus on forest users' overall contribution to deforestation, instead of considering cost-efficiency arguments, to maintain that efforts should be placed elsewhere.

Some submissions also directly articulated small-scale forest users as drivers. Indonesia, for example, argued that 'encroachment by local people including shifting cultivation and other actors for commercial purposes was recorded as one of the drivers of deforestation' (UNFCCC, 2007d: 10). Poor people were also articulated as driving forest loss. It was argued that poverty can lead to 'environmental degradation that they [the poor] cause out of necessity, as they have no other way to earn a living' (IES 2007: 5). Local forest users were thus articulated as one of several drivers of deforestation, and they are also considered cheaper to target by the logics of compensating for incurred opportunity costs.

Taken together, this section suggests that REDD+ articulates a field of visibility in which international drivers are not emphasised, and that Parties were reluctant to prohibit those commercial activities that contribute to export-led growth strategies. Moreover, while subsistence forest users were not articulated as the sole drivers, they were considered cheaper to address than other drivers. It follows that those forest users will likely be targeted as key drivers in REDD+. This would be in line with the principle of cost-efficiency that is a fundamental legitimating idea of the rationality. The next section considers *how* the drivers are to be addressed.

6.2 Governing forest users through opportunity cost compensation

It has been suggested that REDD+ is a payment for ecosystem services scheme since it is based on the idea to pay forest users to conserve forests. However, a plethora of different approaches to reduce emissions were suggested in the submissions. Many Parties provided lists of useful approaches similar to this:

- The promotion of private sector as well as local and indigenous communities' participation in the sustainable management of forests.
- The design and implementation of positive incentives through economic and financial mechanisms and instruments.
- The enhancement of conservation activities inside and outside protected areas.
- The promotion of sustainable productive forest activities.
- The design and implementation of sustainable activities on non-forested land (agriculture, ranching, etc.) to reduce pressure on forests. (UNFCCC, 2006d: 112)

The second point in this list is the payment option, but it is coupled with a range of activities where the fourth point corresponds to the above suggestion that productive forest activities

should be made more sustainable. Moreover, both increased participation in sustainable forest management as well as enhancement of protected areas were suggested. While they are each other's opposites, both have long histories as methods to conserve forests and other natural resources (Igoe, 2004, Balint and Mashinya, 2006). It was also argued that prohibiting illegal logging and clarifying tenure rights would be conducive to forest conservation (UNFCCC, 2006c, 2007c). Most submissions therefore realised that strict monetary compensation according to incurred opportunity costs will not suffice, and that a national strategy must be designed out of several different components to encourage forest conservation.

The vast majority of submissions, however, indicated that payments was the central ingredient to incentivise forest conservation. The logic of compensating forest users for incurred opportunity costs represents them as subjects responsive to monetary incentives, because flows of revenue are assumed to prompt behavioural change. Stephan (2013: 123), however, suggests two contradictory subject positions in REDD+; the 'rational, utility-maximising carbon entrepreneur' and the 'noble savage'. The rational carbon entrepreneur is drawn directly from the opportunity cost rationality and the idea that subjects are responsive to monetary incentives. The noble savage, on the other hand, articulates a subject that lives in harmony with nature, that does not conserve forests in order to maximise profits, and where monetary incentives can potentially spoil such environmental virtues (e.g. Vatn, 2010). In this regard, the noble savage approaches the anti-commodification and eco-centric principles noted in the previous chapter.

The submissions did not engage in discussions regarding the incentive structure or other behavioural characteristics of forest users. It is, however, argued that subject positions were presupposed in the submissions and they correspond to Stephan's suggestion. When the submissions addressed forest users, it most often concerned a set of enabling conditions to

participate in REDD+. As detailed in the previous chapter, Parties sought to ensure that forest users can actively participate in REDD+ project development, that illegal activities are prohibited, and that tenure rights are clarified and respected. It was also argued that many Parties wanted access to carbon markets, particularly during the first years of the negotiations. These conditions facilitate some of the institutional structures of a market-based economy envisioned by early neo-classical economic theory, such as a system of money and exchange, private property, and the attainment of wages or profit (Clarke, 1991). The institutional structures were modelled on rational economic actors and it was acknowledged that their realisation may be hindered by market imperfections, such as information asymmetries, illegal activities and monopolistic formations (*ibid.*). The theory therefore advocates governmental intervention to remove such imperfections, and the enabling conditions of REDD+ correspond to both the creation of a market and to the removal of market imperfections.

To exemplify, many Parties wanted to institute carbon markets, which will function as a system of money and exchange that facilitates wages or profit. The clarification of tenure rights corresponds to the institution of private property. Ownership of land is essential in order to determine market participation and allocate profit. Prohibiting illegal logging ensures that tenure rights are respected and that forest users with such rights partake in carbon markets, while also excluding those without rights. Involvement in REDD+ project development also encourages market participation, thereby ensuring that forest users will partake in market arrangements to realise wages or profit. The enabling conditions of REDD+ thus correspond to the governmental intervention envisioned by neo-classical economics, which is to create the necessary market-based conditions in which ‘the rational attempt to maximise utility [can] spontaneously evolv[e] by the action of self-interested individuals’ (Clarke, 1991: 198). When the enabling conditions are satisfied, the submissions indicate that REDD+ may work,

compensation according to incurred opportunity costs may incentivise forest conservation. The submissions thus presuppose a subject that can exist within these institutional structures and maximise utility, which articulates them as responsive to monetary incentives arising from opportunity cost compensation.

The early years of the negotiations also saw this form of subjectivity being contested, although by very few submissions, and this by drawing on subject positions to some extent approaching what Stephan described as the noble savage. Friends of the Earth International (2006: 4), for example, asked ‘what efforts will be taken to safeguard the traditional knowledge and practices used that can help to protect ... forests?’. Another non-state actor argued that REDD+ ‘should recognise, respect and develop protection regimes for traditional knowledge and promote its application’ (CAN 2007: 8). Finally, the Global Forest Coalition (2007: 3) argued that ‘[i]n countries where deforestation ... [has been] halted it was mainly education, public awareness raising and fostering the traditional value systems of Indigenous Peoples and local communities that formed the key to successful forest policy’. These submissions do not articulate a subject position living in harmony with nature, but one embodying traditional knowledge and value systems, and they position REDD+ as alien to, and perhaps destructive of, this knowledge and these values. The submissions therefore articulate forest users as embodying qualities deviating from the postulate of utility-maximising individuals.

These early submissions were few, but they were later joined by further submissions, and together they advanced the anti-commodification and eco-centric principles challenging the rationality, as analysed in the previous chapter. The dominant subject position in the 2005 – 2007 period was, however, the rational forest user responsive to monetary incentives. The next section considers how a different subjectivity was presupposed later in the negotiations, which fits neither the utility-maximising nor the noble savage category.

6.2.1 From opportunity cost compensation to the governance of subjects' conduct

This chapter has argued that local forest users are likely to be targeted as key drivers of forest loss and mainly governed through opportunity cost compensation, which is facilitated by a range of enabling conditions corresponding to the institutional structures of a market-based economy. However, many submissions went from discussing enabling conditions to argue that forest users should become monitoring practitioners, which is a more hands-on governance approach that presupposes a different form of subjectivity; one where subjects are malleable and their conduct can be improved. This section elaborates on this subjectivity and suggests potential implications.

Monitoring, as indicated in chapter four, is a daunting and expensive practice. Parties therefore considered at length in what ways forest users can partake in this effort. This economic reason, alongside arguments from the previously analysed 'participation discourse', in which participation is creative of effective outcomes, fueled a call for submissions on the topic (UNFCCC, 2008f). Submissions, from both state and non-state actors, included statements similar to the following:

- Local communities should be involved in national systems to monitor the status of forest carbon stocks consistent with internationally agreed guidance, and could reduce the costs of monitoring;
...
- Information, awareness raising and capacity building and transparency are the key elements to promote effective participation of local communities into REDD action and monitoring. (UNFCCC, 2009g: 4)

The first part of this quote was broadly supported in the submissions, including in many of those that were skeptical about REDD+. If REDD+ would be implemented and if it would

have a carbon focus, which was contested in certain submissions, then there was a convergence in the argument that forest users should be as involved as possible, including in monitoring activities (e.g. Global Witness, 2008, ECA 2009a). It has been argued that this is thought to increase the effectiveness of conservation initiatives and that it ‘will provide opportunities to ensure that REDD+ activities “do no harm” to the livelihood of indigenous peoples and local communities’ (UNFCCC, 2009l: 8). There was, however, also a third argument, stated in the following manner by Panama and Costa Rica:

The advantage of having local and indigenous peoples taking part in the monitoring process is that it increases their sense of ownership and their understanding of the impact of land use change, thus enhancing the possibility of success of REDD activities. (UNFCCC, 2009g: 13)

The argument here is that participation has the effect of increasing forest users’ sense of ownership of REDD+ projects. This argument was also repeated by certain non-state actors. The International Institute for Geo-information Science and Earth Observation (2009: 6), for example, argued that ‘[i]nvolvement creates ownership – and thus protection of the forest resources – and generates a steady revenue stream to the local communities that may help establish sustainable livelihoods’. This idea, that participation increases ownership and that ownership increases effectiveness, is also commonplace in the discourses of development assistance and natural resource conservation (Williams, 2006, Fletcher, 2010).

Such arguments for monitoring participation likely influenced a negotiation outcome that *encourages* ‘as appropriate, the development of guidance for effective engagement of indigenous peoples and local communities in monitoring and reporting’ (UNFCCC, 2009e: 12). However, as detailed in chapter four, monitoring according to IPCC methodologies is complicated. Many submissions therefore also argued that forest users need to be trained, as

indicated in the second part of the above quote (UNFCCC, 2009h, j, k). Tuvalu, for example, argued that '[t]raining facilities should be provided for Indigenous Peoples and local communities to allow them to properly participate in forest inventory programmes' (UNFCCC, 2009h: 7). Forest users should thus be trained in order to be able to participate in forest management and monitoring activities as this increases their sense of ownership, which in turn is taken to increase the effectiveness of forest conservation while reducing costs.

This type of governance aimed at training forest users and creating ownership does not follow from the presupposition of utility-maximising individuals drawn from neo-classical economic theory. There would be no need to create ownership if individuals appropriated that theoretical subject position, because they would know when to care for natural resources, and when not to, based on cost-benefit reasoning. This deviation from the rational actor model is not surprising. REDD+ and the idea of opportunity cost compensation is based on economic theories relying on this rational form of subjectivity, but in the practice of development assistance and natural resource conservation, the traditions drawn on when operationalising REDD+, those theories have always been coupled with other theories and a practice that is less theoretically stringent and adaptive to local contexts.

One such alternative theory was proposed by Cammack (2014) when discussing the World Bank, an institution implicated in REDD+. Cammack (2014: 2) argued that rational actor theories are being abandoned as a basis for development assistance; '[t]he World Bank has discovered that people are programmable, and some (poor people) are more programmable than others'. Their 2015 World Development Report has therefore 'ditched the "rational actor" model on which neo-classical economics was built, as an impediment to the purposive transformation of society' (ibid.). In making this argument, Cammack drew, in part, on Foucault (2008), who provided a historical assessment of the changing governing principles of

liberalism, in which neo-classical theory is not the sole tradition. Foucault discussed, in particular, neo-liberalism, and the ‘neo’ part had a distinct meaning for him. Neo-liberalism, as opposed to liberalism, is based on the realisation that ‘[t]he market is not a natural social reality at all; and what is incumbent on government is to conduct a policy towards society such that it is possible for a market to exist and function’ (Gordon, 1991: 43). Crucially, this is followed by another realisation: ‘homo economicus is manipulable [wo]/man, [wo]/man who is perpetually responsive to modifications in [her]/his environment’ (ibid.; emphasis removed).

Both markets and subjects are here seen as malleable. Markets can and need to be created and, subjects can be manipulated to better fit a market-based society. Cammack thus suggested that the World Bank does not operate based on neo-classical liberalism and a rational actor model, but rather on principles closer to this neo-liberal model charted by Foucault, where subjects are manipulable or programmable, which may have the consequence that better outcomes are achieved. This exploration into the works of Cammack and Foucault fits REDD+ well. A market and/or fund-based payment scheme is being created and it is suggested that forest users should be instilled with suitable knowledge through education, training and capacity building to engage effectively with the scheme and act as monitoring practitioners. While this may not constitute a ‘purposive transformation of society’, it is hoped to lead to more effective forest conservation and cheaper monitoring.

Foucault (1991a) argued that power in society can be characterised as a triangle formed of sovereign, disciplinary and governmental powers. The governance of forest users highlights the former and the latter. Sovereign powers are wielded through political negotiations to decline forest users rights to reject REDD+ projects. Enabling conditions are thereafter created to allow forest users to partake in forest conservation in return for monetary incentives. This is coupled with governmental powers, manifested in the training of forest users to institute suitable

knowledge to both participate in monitoring and facilitate an increased sense of ownership, since this improves forest conservation and is cost-effective. Forest users are thus assumed to be rational, but also malleable with potential for improvements of their conduct; those are the ‘forms of subjectivity’, the discursive constitution of forest users that form the basis for instituting REDD+ projects in tropical forests.

Scholars of PES schemes have sought to evaluate the possible impacts of the governance instruments discussed in this section. Vatn (2010: 1245) argues that PES schemes may ‘introduce a purely instrumental logic and in some cases worsen the environmental status by crowding out environmental virtues’. PES is thus seen as a form of governance that has the power to influence peoples’ conduct and crowd out forms of environmental stewardship. This present research project is, however, a suitable target of Agrawal’s (2005: 165-6) critique of governmentality research; it ‘defers a consideration of how subjects make themselves, focusing primarily on technologies of power aimed at objectifying individuals’. That is, the governance instruments seeking to create suitable subjectivities are contingent both on the presumably very diverse subject positions of forest users, and how they ‘make themselves’ when subjected to those instruments. The argument Vatn advances should be treated with caution because it relies on two assumptions that have not been qualified in this research project: first, that forest users are pristine subjects with special environmental virtues; and second, that the PES component of REDD+ is a type of governance powerful to the extent that it crowds out those virtues.

A more moderate argument is thus suitable. It has been detailed that subjects are never free from power relations. Subject positions are presupposed by governmental rationalities and instantiated in everyday interactions, with unpredictable yet formative effects. Foucault scrutinised this and other forms of power, but this was not followed by the opinion that ‘everything is bad’; rather, it was to caution that ‘everything is dangerous’ (Foucault, 1983:

231), because we can never expect to be rid of power relations. The same cautious remarks apply here. REDD+ is implicated in power relations with effects that are unpredictable and potentially pervasive, and it would be dangerous not to highlight this particular aspect of the scheme.

While capacity building and training of forest users to instill certain knowledge and habits is indeed common sense in the practices of development cooperation and forest conservation, it can have formative effects because it presupposes and forms particular behaviors and reward systems over long periods of time. As the previous chapter showed, the only aspect of forests that is given a monetary value is carbon. Other aspects, such as biodiversity or cultural attachments, are not seen as negative, but for the purpose of REDD+ they are rendered valueless. Forest users should relate to and conserve forests based on carbon and its monetary value, as opposed to other attributes and means of valuation. They are also taught to measure and monitor how their behavior affects carbon quantities, and to appreciate and adapt to those actions that increase carbon stocks. Forest users are likely very heterogeneous, which suggest that how they relate to forests may differ considerably. However, REDD+ may introduce different ways of valuing forests, and those ways are instantiated and repeated over time since carbon becomes the dominant livelihood.

Shifting cultivation is a valid example here. Shifting cultivation is a farming system part of many cultures that also provides hydrological and biodiversity services. However, the effects on carbon are disputed with studies showing both positive and negative outcomes, and that those outcomes are dependent on a range of factors, including the duration of fallow periods and land availability (Mertz, 2009). Mertz (2009: 158) argues, from such a departure point, that if REDD+ is introduced, ‘it appears that there could be economic gains from maintaining forests rather than clearing new land for cultivation – and shifting cultivators may indeed be interested

in such programs if the conditions are favorable'. It is thus suggested, from a purely economic point of view, that shifting cultivators may want to surrender their farming system and instead engage in REDD+ and conserve carbon in return for payments, and then use those payments in 'a market where adequate and affordable food products are available for purchase to substitute production' (Mertz, 2009: 158). It may be considered rational to do so, it is argued, if it can be shown that economic gains are higher through REDD+. However, this transition from being a shifting cultivator to becoming a forest conserver and market participant also depends on education in carbon monitoring, an attunement of practices to maximise carbon gains, and a transition to an exclusive valuation of the biota in terms of carbon and the revenue it can provide.

Understanding such transitions through a lens attentive to power relations do not entail that they are always 'bad', but rather that they presuppose and depend on a different way of relating to forests, farming and income generation. Certain livelihood strategies give way to new strategies, and new forms of valuation are introduced, here making carbon the predominant valuation form. Foucault's caution that power relations are 'dangerous' does therefore not designate the possibility of physical harm in this case. Rather, it designates a danger of perceiving subjects as free from power when they pursue their own choices, because they are guided towards particular forms of conduct at the same time. Shifting cultivators would ideally, depending on national legislation and circumstances, freely choose whether or not to engage in REDD+, but beneath this choice lies a governance of their conduct that may have formative effects over time. This becomes all the more important to highlight in a negotiation setting because, as the previous chapter illustrated, this form of governance is dependent on the political economy of the negotiations in which forest users have not been accorded explicit rights to reject REDD+ projects. Moreover, Annex 1 countries have showed an unwillingness

to govern their own populations, and local forest users will likely be considered primary governance subjects, not because they are the only drivers of forest loss, but because they are considered the cheapest factor to address. The next and final section considers an attempt to challenge this focus on local forest users and instead include actors within Annex 1 countries as drivers to be governed in REDD+.

6.3 Resisting and reaffirming the governance of local forest users

This chapter has argued that international drivers are not likely to be addressed in REDD+ and that local forest users may be targeted as key drivers. This was, however, based on the first years of the negotiations and a call for submissions to intensify negotiations on drivers was announced in 2010, and attempts were made in those submissions to challenge the previous decisions on the topic. Those attempts were a form of politicisation where knowledge was advanced to argue that local forest users should not bear the primary responsibility for forest loss, and that REDD+ will be less effective if actors within Annex 1 countries are not directly governed, because they are major drivers of forest loss.

Non-state actors championed this politicisation and frequently articulated international drivers of forest loss in their submissions. The Ecosystem Climate Alliance argued that ‘[c]ommercially produced timber, agricultural and livestock commodities are now the main drivers of deforestation and forest degradation worldwide’, and ‘demand for these commodities comes primarily from developed country markets’ (ECA 2011c: 1). The submission went on to state that

[c]onsumers remain largely ignorant and thus indifferent not only to deforestation but also to illegal and corrupt practices that undermine governance, landholder, local

community and indigenous peoples' rights, and the rule of law at every level of government within supplier countries. (ECA 2011c: 1)

In this statement, consumers in 'developed country markets' are positioned as culprits that, through their indifference, promote deforestation and jeopardise the rights of forest users. The Global Forest Coalition (2012: 6), on the other hand, again discussed Annex 1 country subsidies and argued that 'those policies that provide subsidies and other incentive schemes to promote agrofuels and bio-energy production ... squarely contradict the efforts being made by the international community to reduce deforestation'. Failure to address those drivers, they continued, is a key reason why REDD+ 'is likely to fail' (ibid.: 5). These submissions thus argued that REDD+ will only be effective at reducing forest loss if the factors incentivising this loss are addressed at their roots, which on many occasions are outside of those countries implementing REDD+.

The majority of non-state submissions also argued that local forest users should not be considered primary drivers in light of other national and international drivers. The Ecosystem Climate Alliance (2011c: 7) argued that one should 'not place the blame at the doorstep of local communities and traditional agriculture as has been the case in some instances'. The Climate Action Network (2012: 7), on the other hand, directly targeted the opportunity cost logics of REDD+ by stating that

[s]mall-scale producers, whose access to forests is simplistically perceived by some economic studies as having the lowest opportunity cost, are often seen as the easiest sector to target when addressing drivers, instead of the more powerful vested interests of large corporations that are more politically difficult to confront. Recent studies show that small-scale producers are not major drivers of deforestation.

This statement considers, and directly critiques, the rationality and its solution to deforestation in the form of compensation for incurred opportunity costs. The solution is considered simplistic because it ‘exclude[s] transaction, communication and enforcement costs’ (ibid.). In other words, opportunity cost compensation excludes all the on-the-ground costs of operationalising REDD+ and of providing alternative livelihood strategies for forest users. If such factors are considered, it is implied, the associated costs may rise. The statements also considers ‘powerful vested interests’, and it suggests that local forest users can be more easily governed than large corporations, thereby indicating that the selection of drivers in domestic contexts may be influenced by politics and vested interests.

The argument emerging from many non-state submissions is that while local forest users drive forest loss in certain areas, they are not major drivers and are on many occasions better forest stewards than other actors implicated in forest loss, such as large corporations or consumers in Annex 1 countries. Most non-state submissions therefore argued that domestic commercial drivers and international drivers should be addressed, but also that sustainable livelihood alternatives should be assured for local forest users, for example through low-emissions development strategies (e.g. CAN 2012).

The attention to international drivers was combined with arguments to address them through the UNFCCC negotiations and within the REDD+ mechanism. Wetlands International (2011) argued that all Parties should collectively address national and international drivers and the SBSTA should initiate a workshop to enable collective action. The Ecosystem Climate Alliance (2011c: 13) similarly asked the SBSTA to develop ‘strategies and methodologies for consumer countries to address their role in driving deforestation and degradation abroad, as their actions in this area will be essential to the success of REDD+ programs’. These actors thus advanced policy proposals politicising previous decisions, which only requested non-Annex 1

countries to address drivers on a mandatory basis, with the aim to develop guidance placing similar requirements on Annex 1 countries.

While the majority of non-state actors articulated international drivers, roughly half of Party submissions did the same. Some of those submissions only made a few notes on the topic, merely calling for further studies and deliberation within the UNFCCC. Others were more elaborate, in particular the submissions by the EU, Norway, and Switzerland together with Lichtenstein and Monaco. Switzerland, Lichtenstein and Monaco, for example, argued that ‘[t]he main drivers of deforestation are increasingly recognized to be economic and related to international markets’ (UNFCCC, 2012c: 61). Those drivers were further differentiated into high value ‘food crops, soybeans, beef, palm oil, biomass for energy, and timber [that] drives large-scale land-use change’ (ibid.). The submission also argued that Annex 1 countries should

[f]oster responsible business conduct of their multinational companies operating abroad in activities related to deforestation ... [a]ddress wasteful consumption ... [and] [i]ncrease public awareness of companies and consumers buying and investing in food, fiber and fuel commodities and products to distinguish between them based upon their legality and sustainability. (ibid.: 62)

This statement articulates clear subject positions, such as multinational companies and consumers in Annex 1 countries, as bearing a responsibility for driving forest loss. Certain states thus articulated, as clearly as non-state actors, the importance of addressing international drivers for the REDD+ mechanism to be effective.

A number of states also sought to articulate local forest users in a similar manner to non-state actors, and position them as responsible forest stewards that should be recognised as conserving forests rather than driving forest loss (UNFCCC, 2012c). Some did, however, indicate that local forest users bear a responsibility for forest loss. For example, Pakistan noted

that while ‘addressing drivers of deforestation and degradation ... direct correlations with poverty and sources of livelihood must be ... established’ (ibid.: 59). However, neither this nor other submissions articulated forest users as inherently poor forest stewards. Rather, challenging socioeconomic conditions were isolated as the main issue, which made forest users highly dependent on forests with few livelihood alternatives. A mixed picture could thus be seen, where a few articulated local forest users as a driver, while others suggested that they do not bear the primary responsibility for forest loss.

This mixed picture was, however, not carried over into concrete actions. Very few submissions specifically suggested governance arrangements to target local forest users at the expense of other domestic drivers. Some Parties, notably the EU, Norway and Switzerland together with Lichtenstein and Monaco, instead followed suit with non-state actors and proposed a variety of governance initiatives to address international drivers. Suggestions included public procurement policies, certification schemes to promote sustainable logging and prohibit illegal activities, public awareness raising, and the promotion of responsible finance with regards to taxes, subsidies and investment (UNFCCC, 2012c). Certain states were thus seemingly intent on addressing international drivers. However, while the EU and Norway argued that non-Annex 1 countries should address drivers in their national REDD+ strategies, they did not state that international drivers should be addressed within the REDD+ mechanism. Switzerland, Lichtenstein and Monaco’s submission had a ‘Conclusion and Recommendations’ section specifying that drivers should be analysed and addressed in an ‘international context of demand and supply of commodities’ (UNFCCC, 2012c: 63). It is not clear whether this international context equals the REDD+ mechanism, but it is possible.

Aside from this possible exception, then, a picture emerges where domestic non-Annex 1 drivers are stated alongside corresponding domestic governance arrangements within

REDD+, but international drivers are relegated to arrangements *outside* of the REDD+ mechanism. There was thus a clear disconnection between how drivers were represented and the associated policies suggested to address those drivers. Factors articulated as important to address were not suggested for inclusion in REDD+. A comparison with the analysis of the rationality helps elucidate this disconnection. The analysis of the rationality noted presuppositions of perfect market conditions, and the absence of power asymmetries and abuse within countries. Those conditions legitimised the rationality's positive assumption that REDD+ will lead to cost-effective emission reductions and a range of co-benefits. While the conditions were severely critiqued by some states and many non-state actors, the assumption of cost-effective emission reductions and co-benefits did follow from those perfect representations in a coherent manner. This coherence was lacking for international drivers because while they were clearly articulated, no concrete actions to address them through the UNFCCC negotiations were proposed. Parties thus chose not to directly address the issues they articulated, but this did not lead to a questioning of the effectiveness of REDD+ in a similar vein to non-state actors.

The second chapter suggested that post-structural theorists assume such a coherence between representation and policy proposals. For governmentality research it was phrased as close links between representation and action, and for discourse theorists as a relationship between discourse and policy. Such links are, however, not deterministic, and both submissions and respondents indicated issues with acting on the representations of international drivers. The main reason was likely 'that drivers of deforestation and forest degradation often are key contributors to local and national economies' (UNFCCC, 2012c: 57). Measures to address international drivers would decrease the consumption in Annex 1 countries of forest and agricultural commodities, and this was considered to affect non-Annex 1 economies negatively by obstructing export-led growth strategies. This was corroborated by Party representatives

who not only discussed the necessity of achieving development through exports, but also detailed how certain negotiators sought to prohibit the consideration of international drivers within the UNFCCC by arguing that it contradicts the rules of the World Trade Organisation (Party Interview, 2013e, g). The tactic was confirmed by non-state actors who, moreover, sought to dispute such claims (NGO Interview, 2013h), in part by putting out a briefing for the negotiations describing their argument in some detail (Horner et al., 2013).

The submissions were the basis for negotiations on the topic, and a decision was adopted in 2013 that specifies little in terms of practical arrangements to address drivers (UNFCCC, 2013c). It *reaffirms* older conclusions regarding ‘the importance of addressing drivers of deforestation and forest degradation in the context of the development and implementation of national strategies and action plans by developing country Parties’ (ibid.: 43). It furthermore *encourages* ‘all Parties, relevant organizations, and the private sector and other stakeholders, to continue their work to address drivers of deforestation and forest degradation’ (ibid.). The use of the words ‘all Parties’ suggests that Annex 1 country Parties also should attend to drivers. However, the word ‘encourage’ is employed instead of stronger words, such as ‘request’, which effectively makes this part of the decision optional. This decision thus suggests that the attempts to politicise REDD+ and alter the field of visibility to directly govern users of forest and agricultural commodities in Annex 1 countries had very little impact.

Several respondents, including from states, were displeased with the decision. While one Annex 1 respondent wanted more text ‘to reflect the international drivers of our own consumption patterns’ (Party Interview, 2013g), another went further to argue that ‘it is a joke’ (Party Interview, 2013e). The respondent elaborated by stating that the decision is

completely empty [of] language ... [it] is a kind of non-decision, and that is a way to say: “ok we have considered it and we don’t want to do anything new on it under the

UNFCCC”, which might be a good decision by the way, but it is a non-decision that wants to look like a decision so I think it is a demonstration of all the emptiness you can make as a negotiator. (Party Interview, 2013e)

The statement suggests that the decision is a type of political performance to enable closure without addressing those international drivers that were articulated by both Parties and non-state actors. This questions the effectiveness of REDD+ according to several states and the majority of NGOs who advanced the argument that global markets and consumption patterns in Annex 1 countries are primary drivers of forest loss. Leaving such drivers unaddressed entails, in their view, that the demand for forest and agricultural products incentivising deforestation and degradation remains.

The main argument presented regarding why international drivers should not be addressed was that it may hinder the export of forest and agricultural commodities, which may interfere with export-led growth strategies. This argument not only suggests why international drivers were largely subjugated in the negotiation outcome, it also indicates that countries implementing REDD+ may seek to curb deforestation and forest degradation from those activities not associated with exports. In other words, this argument suggests that REDD+ activities may target local forest users rather than private or public enterprises producing commodities for sale on international markets. There are thus two arguments why REDD+ may articulate local forest users as key drivers at the expense of other drivers: they are according to opportunity cost logics cheaper to address, and targeting them, as opposed to commercial drivers, does not interfere with export-led growth strategies.

The decision was, however, not completely empty of language, as the respondent stated. Rather, it also *notes* ‘that livelihoods may be dependent on activities related to drivers of deforestation and forest degradation and that addressing these drivers may have an economic cost and implications for domestic resources’ (UNFCCC, 2013c: 43). This is the only section

of the decision that highlights a specific type of driver, and while the wording is slightly peculiar, it singles out the livelihoods of forest users as a driver. Both international and domestic drivers remain unspecified aside from livelihoods and this is surprising given that neither non-state nor Party submissions articulated local forest users at the expense of other drivers. The decision was drafted in Bonn, Germany in 2013 and when it was presented several non-state actors laboured to get Parties to reconsider the wording as they considered it worrying that the livelihoods of forest users were mentioned as the sole driver. However, this was to no avail and the unedited decision were adopted half a year later when the Conference of the Parties met in Warsaw. This decision thus constitutes a third argument why local forest users may be targeted as key drivers in REDD+. It also strongly illustrates that the attempt to politicise the drivers' negotiations to *not* articulate local forest users as important drivers was far from successful.

It remains to be seen how implementing countries will address domestic drivers, but this section has argued that countries are likely to continue supporting the production of commodities for international markets to sustain economic growth. Moreover, respondents argued that 'it is very clear that REDD+ finance cannot compensate ... opportunity costs when it comes to oil palm plantations' (Party Interview, 2013g) and other export-oriented commodities (NGO Interview, 2013h). If, therefore, local forest users are targeted at the expense of commercial drivers, a scheme would emerge where commercial activities are sanctioned in tandem with the equally sanctioned consumption patterns of emerging economies and Annex 1 countries fuelling those activities. This would leave many drivers articulated in submissions unaddressed and place a disproportionate burden on local forest users. As argued in the previous section, this governance may also have profound effects on the everyday lives of forest users.

6.4 Conclusion

This chapter analysed both who were articulated as drivers throughout the negotiations and what measures will be taken to confront them, thus addressing the research question: *Who are represented as drivers through the negotiations and how will they be governed?* The chapter commenced with an analysis of what actors were represented as drivers from 2005, when REDD+ was first considered, to 2007 when the scheme was included in the Bali Action Plan. Both national and international drivers were articulated, and negotiation outcomes *encourages* all Parties to address them. However, the outcomes only *requests* non-Annex 1 Parties to address drivers on a compulsory basis, which suggests that drivers will primarily be addressed in countries implementing REDD+ given that Annex 1 countries will not receive incentives to address their drivers. It was also argued that small-scale forest users were articulated as key drivers of deforestation, both because their opportunity costs are considered lower and because non-Annex 1 Parties may not want to address those activities producing commodities for international markets.

A section thereafter considered *how* drivers should be addressed. However, the interest here was not primarily with the practical governance initiatives employed in REDD+, but rather with the ‘forms of subjectivity’ that those governance initiatives presuppose. This was relevant, it was argued, because subjects’ conduct can be shaped through governance initiatives. It was argued that forest users were articulated as subjects drawn from neo-classical theory that are responsive to monetary incentives arising from opportunity cost compensation. However, forest users were also assumed to be malleable and responsive to training exercises, which would improve their sense of ownership and allow them to partake in monitoring activities to reduce the costs of implementing REDD+ projects. It was argued that this type of governance can have

formative effects and potentially introduce new forms of valuation centred exclusively on carbon.

The final section considered an attempt to politicise the field of visibility of REDD+ and direct attention away from local forest users as key drivers, and instead place it on actors within Annex 1 countries. Both Parties and non-state actors took part in this attempt and articulated a range of international drivers in their submissions. However, the negotiation outcome made attention to international drivers voluntary, while articulating the livelihoods of forest users as the only driver. It remains to be seen how implementing countries will address domestic drivers, but several Parties expressed an unwillingness to address drivers related to exports and/or a concern that it would be too expensive to do so through REDD+. It is thus possible that many drivers articulated in submissions are left unaddressed and that a disproportionate burden is placed on local forest users. Addressing drivers results in reduced emissions, and the next chapter gives detailed attention to how those emissions will be monitored.

Chapter 7

FAITH IN TECHNOLOGIES

The ambition with REDD+ is to measure forest conservation with a level of precision that makes it possible to construct carbon credits and use those credits as offsets. This is facilitated by monitoring devices that bracket much of tropical forests and their rich ecosystems, and inscribe forests as stocks and flows of carbon. The analysis in this and the following chapter focus on the negotiations establishing the guidelines for how inscription should be undertaken. The two chapters are chronological, like the previous analytical chapters. This chapter starts with an analysis of the negotiations up to the adoption of the Bali Action Plan in 2007, and the remainder of this chapter as well as the following focus on later years.

The early years of the negotiations featured a general discussion on the ability of monitoring devices to inscribe forests as carbon stocks and flows. It will be argued that negotiators confidently assumed that monitoring devices could presently, or in the near future, be deployed to measure carbon emissions from forests. This resulted in the adoption of the Bali Action Plan in 2007 that included indicative guidance for how monitoring should be carried out. The guidance was demanding because it was based on a belief that rigorous monitoring could be carried out. However, it was only indicative and negotiators later fleshed out this guidance into concrete decisions where some parts of the guidance became compulsory and other parts less compulsory. The second section and the next chapter draw on ANT to analyse how Parties fleshed out this indicative guidance of the BAP to create a framework suitable for the production of carbon credits. In doing so, both chapters address the research question: *How is REDD+ carbon rendered tradable through the negotiations?*

One part of the guidance is analysed in this chapter, which is the method for establishing reference levels briefly discussed in chapter four. The negotiations of three different methods are analysed up to a decision in 2009 that specified what method Parties had to adopt when constructing their RLs. ANT is utilised to trace how Parties struggled with challenges coming from both humans and non-humans when negotiating the different methods, and to give an impression of how this influenced the negotiation outcome on the topic. In doing so, the chapter aims to elucidate those issues that would otherwise be subjugated or ‘black boxed’ when decisions are finally adopted. The chapter concludes with an argument that the confidence negotiators exerted in the early years waned due to a range of factors, including troublesome non-humans, namely clouds.

7.1 Faith in technologies

Parties did not engage in detailed negotiations on different policy proposals during the period between late 2005 and the adoption of the BAP in 2007. They instead had a more general discussion on whether monitoring technologies were available to operationalise the rationality. The period can best be described as one where negotiators had a much stronger faith in technologies than the previous negotiations discussed in chapter four, where technical uncertainties was a major reason for excluding ‘avoided deforestation’ from the CDM. Negotiators were of the opinion that technologies could be applied to render carbon tradable. Carbon stocks and flows could be accurately monitored to create carbon credits for market-based trading. If certain monitoring aspects were challenging, there was a broad confidence that capacity gaps would be closed in the near future. This section details this faith that negotiators had the early years of the REDD+ negotiations. This is pertinent because it serves as a basis to

understand how this faith was compromised throughout later stages of the negotiations. It has a point by point structure, similar to the technical sections in chapter four.

The original REDD+ proposal advanced by the Coalition of Rainforest Nations came with some conceptual novelties that was argued to ensure that emission reductions are accurately measured (UNFCCC, 2005). It was based on a ‘compensated reductions’ approach presented by a set of researchers at COP9 in 2003 (Santilli et al., 2003). This approach relates closely to the technical discussion conducted in chapter four, but a key novelty was that while the CDM scheme was project-based, the new REDD+ proposal suggested implementation at a national level.

Reference levels: A national level implementation means that RLs are established on a national level. As discussed in chapter four, RLs set out a hypothetical scenario against which emission reductions are measured. This makes them a necessary component to render carbon tradable. Both submissions and expert workshops considered different approaches to establishing RLs (UNFCCC, 2006d, 2007b). While challenges were noted in certain submissions (UNFCCC, 2006d), most negotiators were of the view that they could be constructed if capacity building was undertaken and if Parties could agree on common approaches and definitions. The following quote was a typical sentiment during the period:

On technical and methodological issues, we note that these can be problematic, for example, *the establishment of baselines to determine avoided deforestation*, and monitoring and verification issues. The issues of leakage, additionality and permanence will also need to be explored and adequately addressed to ensure that solutions to deforestation are durable, and have environmental, scientific and economic integrity. *These issues are not insurmountable.* (UNFCCC, 2006d: 98, emphasis added)

Negotiators thus articulated certain issues, but they generally agreed that reliable RLs could be developed if capacities were improved and if the right technologies were made available.

Monitoring: Monitoring concerns both activity data and estimates of carbon emissions based on that data. It was generally argued that estimating activity data from deforestation could be carried out with the help of satellites. The original REDD+ proposal asserted that '[w]ith present satellite technology, remote-sensing technologies may be applied with the necessary accuracy and cost-effectiveness', thus indicating that monitoring could be effectively undertaken through remote sensing (UNFCCC, 2005: 9). The next year at the first REDD+ workshop, conducted in 2006 under the SBSTA, participants had at their disposal a technical working paper written by the Secretariat, in which a range of inscription devices were presented alongside comments on their accuracy, cost and availability. It suggested that '[s]atellite observations offer reliable, transparent, and cost-effective measurements of forest and land cover at various spatial and temporal scales ... that allow for consistent measurements of forest and land cover change over large geographic areas and repeating time periods' (UNFCCC, 2006a: 13).

Satellites with remote sensing technology were thus suggested to be the primary inscription device through which deforestation could be detected and measured over time. Those satellites were already available in space and taking pictures of tropical forests. Archived data could thus be used to start building national RLs, and current data to track changes in forest cover over time. The workshop therefore produced the confident assessment that '[t]ools, methods and data are available and the science is robust enough to monitor and estimate emissions from deforestation with an acceptable level of certainty' (UNFCCC, 2006c, p. 17). This statement does not only concern activity data, but also estimates of emissions, which suggests that negotiators also considered the science to be robust enough to convert activity data into emission trends. However, the workshop the following year moderated the confidence regarding the estimation of emissions based on activity data, because '[s]ome participants

highlighted ... [the] non-availability of data for the use of higher tiers or for the estimation of carbon stocks in all pools' (UNFCCC, 2007b: 11). This statement highlights that attaining carbon estimates from all pools could be challenging and that allometric equations to estimate emissions according to higher tiers may not be available. Converting activity data to emission trends was in other words one topic where many negotiators argued that much work lay ahead.

Forest degradation was another topic where negotiators advanced more moderate views. Minutes from the first workshop make clear that negotiators wanted to include the activity:

The need to address forest degradation and other processes in forests leading to GHG [greenhouse gas] emissions was also expressed, as considering deforestation alone could be too narrow an approach, and, as a result, emissions from such processes would not be accounted for and reduced. (UNFCCC, 2006c: 17)

Including degradation entails that further emissions can be reduced, which also means that countries can receive further payments if they manage to successfully address degradation.³⁷ A range of countries pushed for the inclusion of the activity. Bolivia, together with six other countries, argued that 'it is already technically feasible, to detect and monitor the impact of different types of forest degradation and deforestation at a national level with an appropriate temporal and spatial resolution' (UNFCCC, 2006d: 20). Certain non-state actors were also positive to its inclusion (ED and IPAM 2007), and others argued that even if not all forms of degradation can be adequately monitored, 'rapid technological change in remote sensing [and] further high resolution sensor products will be available before 2012' to improve monitoring capabilities (FAN Bolivia, 2006: 2). Another argument was that degradation can be monitored, but measurements produce higher error rates than for deforestation (Conservation International, 2007), and it is more costly and time intensive (CAN 2007).

³⁷ Including degradation is also important from a leakage perspective, but this is discussed in the next chapter.

Other submissions were more cautious. Thailand argued that ‘[d]ata on degradation is difficult to gather. It requires a much greater intensity of ground surveying³⁸ than deforestation, since RS [remote sensing] cannot be used for this (RS cannot see/estimate the biomass density below the canopy)’ (UNFCCC, 2007c: 81). The argument here is that satellites with remote sensing equipment are less suited to detect forest degradation, because activities that degrade forests, such as selective harvesting or fuelwood extraction, often leave crown cover largely intact while depleting the carbon stocks in forests. If this is the case, then satellites cannot see changes in biomass density below the canopy, and therefore have to be complemented with other inscription devices, making monitoring more time consuming and expensive (UNFCCC, 2006e, 2007d).

Including degradation also makes it difficult to establish RLs (UNFCCC, 2007b), because they are often based on historical data of forest trends. While such data was generally considered available from satellites to estimate deforestation, alternative procedures would have to be used for forest degradation (Herold et al., 2011). However, most cautious submissions did not argue that degradation is impossible to include in REDD+. The general argument was rather that additional work has to be undertaken to ‘explore the technical and methodological aspects of monitoring forest degradation ... and to further develop monitoring technologies’ (UNFCCC, 2007b: 14). There was, in other words, a belief in technological innovation. Carbon emissions from degrading forests could be monitored given sufficient developments to close present capacity gaps. Most Parties and non-state actors, if not all, shared this faith in the current or future ability to monitor degrading forests.

Leakage: National level implementation of the scheme was generally considered to reduce domestic leakage issues. The EU, for example, argued that ‘the formulation of national

³⁸ Ground surveying designates monitoring activities undertaken on the ground in forests, as opposed to from satellites and airborne devices.

policies aiming at reducing deforestation within national boundaries is a promising way towards reducing negative leakages' (UNFCCC, 2006d: 8). The rationale here is that a national level mechanism is not subjected to domestic leakage issues because the monitoring system would detect leakage effects from one location to another within countries. Such leakage would therefore be factored in when calculating total reductions in emissions. However, several submissions were concerned about international leakage because a national monitoring system is not equipped to register a movement of emissions from one country to another (UNFCCC, 2006d, 2007g). To exemplify, if REDD+ is instituted in Vietnam and deforestation decreases, the socioeconomic factors that drive deforestation may incentivise increased deforestation in Laos. If Laos is not participating in REDD+, then its increased deforestation will not be accounted for, resulting in that Vietnam is potentially compensated for its emission reductions even though overall deforestation does not decrease.

One response to this issue was that it should not be blown out of proportion since it is more serious for the ongoing efforts to mitigate emissions by Annex 1 countries under the Kyoto Protocol. In the KP, an 'Annex 1 country could in principle cease timber harvests altogether at home and replace them with imports and still receive credits' (Environmental Defence, 2006: 14). That is, when Annex 1 countries account for their emission reductions under the KP, they consider carbon stock changes in the forestry sector, and there are no rules to prevent countries from keeping their carbon stocks intact by consuming imported products, which results in emissions of greenhouse gases elsewhere, i.e. international leakage. The argument is therefore that since approved KP rules may produce international leakage and hence risk compromising additionality for Annex 1 countries, REDD+ negotiators should not let stricter requirements for non-Annex 1 countries be an obstacle in the negotiations.

Another argument was that international leakage can be calculated and appropriately accounted for. It was argued that ‘econometric models can be used to quantify international leakage’ and this led a number of Parties to declare that ‘leakage should no longer be used as an argument against including avoided deforestation under the UNFCCC’ (UNFCCC, 2006d: 32, 46). However, the ability to quantify international leakage has been questioned in a later workshop (UNFCCC, 2009f), and a much more common argument to deal with this type of leakage was to have all non-Annex 1 countries participate in REDD+. The EU argued that ‘leakage from one country to another can be reduced by including all relevant Parties, especially those with high forest cover in an international reduction regime’ (UNFCCC, 2006d: 8). If all countries participate in REDD+, all forests in non-Annex 1 countries would be domestically monitored. If measures to decrease deforestation in Vietnam results in increased forest loss in Laos, it would be detected by the monitoring system of Laos. This ‘all-in’ approach saw widespread support in the submissions.

Tuvalu, however, provided one account that sought to complicate the matter. They advocated for the all-in approach but highlighted a range of difficulties with country capabilities. They argued that ‘some countries may not have the expertise or technology to effectively establish and monitor national RED baselines’, and that ‘some countries experience institutional and governance difficulties’ (UNFCCC, 2007g: 9). Tuvalu was less optimistic regarding monitoring and governance capabilities, and this would be detrimental for an all-in approach. As detailed above, however, most submissions either thought that monitoring *is* or *would be* possible, which is why they generally did not entertain ‘present-capability’ arguments in the context of leakage to the extent Tuvalu did. Consequently, and repeated in several submissions, ‘the discussion on technical issues should not prevent or delay the adoption of

adequate and equitable policy approaches and positive incentives’³⁹ (UNFCCC, 2006d: 114). In other words, there was a belief that technological progress would solve outstanding issues, and the urgency of the matter warranted making haste despite those issues.

Permanence was approached in a similar manner. It was acknowledged as an issue that was considered surmountable. The EU argued that ‘[a] future framework should consider that reductions in deforestation are potentially reversible, therefore it should provide for long term action, and sustained management and conservation of forests’ (UNFCCC, 2006d: 8). It was recognised that reduced deforestation may be reversed, which would compromise permanence. Long term sustained action is therefore necessary, which is another way of saying that incentives should be instituted to allow REDD+ projects to keep sequestering carbon over extended periods of time. Such a suggestion is, however, no guarantee against future project failure, but this did not discourage most state and non-state actors. Rather, it encouraged the submission of proposals for inventive mechanisms to protect against permanence issues.

In their original REDD+ proposal, the Coalition of Rainforest Nations suggested that permanence can be tackled by ‘leveraging the insurance markets to address traditional risks such as fire, flood, etc’ (UNFCCC, 2005: 9). Bolivia similarly suggested that ‘[b]anking carbon credits as a risk buffer for future commitment periods could be appropriate’ (UNFCCC, 2006d: 22). The general idea of these suggestions is that a certain amount of the sequestered carbon is not made available as offsets for Annex 1 countries, but rather banked to insure against non-permanence. If carbon sequestration would be compromised, those banked credits could be used to cover losses. As with leakage, then, but through other mechanisms, potential permanence issues were considered surmountable.

³⁹ Policy approaches refer to REDD+ and positive incentives refer to payments for emission reductions.

Additionality was less explicitly discussed in the early negotiations. However, the original REDD+ proposal argued accordingly:

We believe that by establishing national deforestation baseline rates, the *additionality* of efforts to reduce deforestation can be judged quickly and accurately while underpinned by clear reduction targets. Using these baselines, we can determine, at a national level, whether deforestation has in fact been reduced from historical levels. (UNFCCC, 2005: 9, emphasis added)

The Coalition of Rainforest Nations argued that RLs can be developed on a national level and that emission reductions from deforestation can be adequately monitored. Moreover, the proposal was confident that leakage and permanence issues can be overcome. International leakage was not considered but, as argued above, most submissions were of the opinion that it is a surmountable issue. Together, according to this logic, emission reductions are additional if Annex 1 countries commit to additional domestic emission reductions to ensure that not all sequestered carbon is emitted elsewhere through offsetting.

Taken together, this section argues that there was a belief among negotiators that carbon could presently, or in the near future, be measured with precision while avoiding detrimental issues such as leakage and non-permanence. Forests could be processed through inscription devices that bracket much of these ecosystems and produce quantifiable data of carbon stocks and flows, which in turn could be used for purposes of market-based trading. This is a mode of administering and governing emissions that scholars of climate governance have described by drawing parallels to Foucault's use of the panopticon, in which populations were indexed, ordered and made transparent by a governmental gaze to, at once, facilitate their administration and instil discipline (Foucault, 1977). Lövbrand and Stripple (2011a) made this connection and advanced the term 'carbon panopticon' to describe how inscription devices render carbon flows

transparent, which facilitates their regulation and governance. The term thus denotes a governmental ambition to completely know, to ‘master’, carbon stocks and flows. It is a mode of governing that depends on and assumes complete knowledge of that which is governed.

This mastery is not an ambition that can be relaxed because a major legitimising idea behind REDD+ is to reduce emissions cost-effectively, which is facilitated through the trading of carbon credits containing specific amounts of sequestered carbon. It is not possible to trade commodities with uncertain amounts because those amounts are exchanged for payments and integrated into accounting frameworks in Annex 1 countries. Negotiators and those actors implementing REDD+ can still acknowledge uncertainties resulting from various monitoring imperfections. Those uncertainties must, however, be bracketed or ‘black-boxed’ before they can enter into the market system and accounting frameworks of REDD+, because those frameworks are based on exact rather than uncertain figures. Parties therefore struggled to, as far as possible, develop guidance that would facilitate an accurate quantification of carbon stocks and flows. However, the above section showed that capacity-related issues were noted for certain aspects, including forest degradation, carbon measurements from certain pools, and the use of higher tiers to estimate emissions. Bridging these capacity lacks and the necessity of accurate carbon quantification was a faith in technological innovation. Most negotiators were not discouraged by capacity difficulties because they assumed that technological innovation would enable accurate carbon quantification, which in turn would facilitate the conversion of such quantities into commercial commodities relying on exact quantities.

REDD+ was in 2007 included in the Bali Action Plan based on this faith, with the intention to sign a climate agreement in Copenhagen in 2009. The BAP includes a range of indicative methodological guidance that was later substantially fleshed out through successive rounds of negotiations. This guidance is considered rigorous because it instructs Parties to

include degradation, to use IPCC methodologies that requires higher tiers for significant emission activities, and to measure all carbon pools. It includes eleven methodological points, but only the most relevant points are reprinted in the following:

2. Estimates of reductions or increases of emissions should be results based, demonstrable, transparent and verifiable, and estimated consistently over time.
3. The use of the methodologies described in paragraph 6 of this decision is encouraged as a basis for estimating and monitoring emissions.

[Paragraph 6 states: *Encourages* the use of the most recent reporting guidelines as a basis for reporting greenhouse gas emissions from deforestation, noting also that Parties not included in Annex I to the Convention are encouraged to apply the *Good Practice Guidance for Land Use, Land-Use Change and Forestry*]

4. Emission reductions from national demonstration activities should be assessed on the basis of national emissions from deforestation and forest degradation.

...

6. Reductions in emissions or increases resulting from the demonstration activity should be based on historical emissions, taking into account national circumstances.
7. Subnational approaches, where applied, should constitute a step towards the development of national approaches, reference levels and estimates. (UNFCCC, 2007a: 9, 11)

This guidance specifies a range of directives that Parties should consider when devising their REDD+ strategies. The second point (first of those reprinted) suggests that emission trends should be estimated through procedures that are transparent, consistent and verifiable. They should also be results-based, by which is meant the demonstration of quantifiable results that are the basis for awarding payments. This is facilitated by the guidance in the third point, which encourages Parties to use the Good Practice Guidance for Land Use, Land-Use Change and Forestry (GPG-LULUCF), a very comprehensive IPCC report, when estimating emissions (IPCC, 2003). It includes the different tiers and lays out detailed guidance for how to monitor forest trends and transform such data into carbon quantities. Adherence to IPCC guidelines is

often assumed to ensure what is called ‘compliance grade’ in carbon trading circles (Angelsen et al., 2009), which denotes ‘monitoring sufficient to reassure investors’ (Lovell, 2014b: 6) that traded carbon credits are based on rigorous measurements. The fourth point specifies that REDD+ demonstration (i.e. pilot) activities should be instituted on a national scale and include both deforestation and degradation. The sixth point states that emission trends should be based on historical emissions and take into account national circumstances. As further explained later in the chapter, this point constitutes one of several methods for establishing RLs. Finally, the seventh point specifies that subnational pilot activities may be a useful starting point, but they should constitute a step towards nationwide implementation of the scheme.

Adhering to the guidance of the BAP means that a strict monitoring regime is implemented to render carbon tradable that, as far as possible, measures all activities and carbon pools according to higher tiers when emissions are deemed significant. Parties later engaged in negotiations to substantiate this guidance into more concrete decisions. The technical level of the discussions meant that much less contestation was advanced by non-state actors, which is an observation that Nielsen (2013: 11) also made of the negotiations: the ‘very technical level of REDD+ makes it hard to ... to compete with the science of the discourse’. This was also confirmed by both state and non-state respondents (NGO Interview, 2013h, Party Interview, 2013f), and one NGO representative was ‘disappointed with a lot of NGO campaigning ... [because] they were limited to safeguards and wouldn’t comment on the financing or overall architecture of REDD+’ (NGO Interview, 2013h).

The remainder of this chapter as well as the next do, however, consider challenges to the ‘science of the discourse’. It does so by drawing on actor-network theory to show how challenges can come not only from critical Parties and non-state actors, but also from troublesome non-humans. The impetus for this analysis is to illustrate how the confidence of

the early years of the negotiations waned and was replaced by articulations of uncertainty, and to trace how those articulations influenced the more detailed monitoring guidelines that were later adopted. This gives an impression of those uncertainties that otherwise risks being subjugated, just like previous chapters articulated subjugated forms of knowledge. The next section is a short intermezzo suggesting that the BAP can be understood to be supported by a network constellation. It is a non-analytical and hypothetical section inserted to attune the reader to how ANT is utilised in the subsequent analysis of how negotiators fleshed out the indicative guidance of the BAP.

7.1.1 The Bali Action Plan and network constellations

The negotiations are, as previously explained, consensus-based, which means that the BAP was supported by all Parties. They had a range of inscription devices at their disposal when they undertook those negotiations, which provided them with knowledge of how well forests could be monitored and through what devices. Parties acted based on this knowledge and adopted strict monitoring criteria, and as suggested in the previous section, they assumed that monitoring could presently, or in the near future, be carried out according to these criteria. One can thus understand the BAP as supported by an assortment of material objects, such as inscription devices and the forests they inscribe, and immaterial objects, such as the interests of negotiators and the knowledge produced through the inscription devices. Together, this formed a fleeting network constellation that supported the BAP and facilitated its adoption.

Later in the negotiations, it was time to flesh out the monitoring guidance in decisions that stated more clearly what type of RL method to use, what activities and pools that should be compulsory to monitor, and what tier level to use when estimating emissions. Parties may at

that point have had new inscription devices at their disposal and hence more evidence of how well monitoring could be undertaken. It is also possible that their interests had changed, for any unknown reason. The network constellation had thus been altered to some extent and it may have seemed less easy to uphold the indicative guidance of the BAP in this new constellation. This constellation could therefore produce new negotiation outcomes less strict than the BAP for a number of reasons. For example, Parties could change their minds about certain aspects of the BAP because they thought it would be too expensive to buy sophisticated monitoring equipment. Another possibility is that innovations in monitoring technologies had not progressed as quickly as expected, with the consequence that degrading forests could not easily be monitored with available equipment. A third possibility is that troublesome clouds hovered in the way of satellites when they were taking pictures of forests, which would translate into poor data quality of deforestation trends, perhaps making it difficult to adhere to the guidance of the BAP in which emissions should be consistently estimated over time.

Failure to uphold the indicative guidance can always be related to humans because it was them and their will to master forests that constructed the BAP in the first place. It can always be said that Parties had overstated their abilities in their effort to produce carbon credits of the highest possible quality. This is, however, ignored through ANT in order to zoom in and trace particular issues within the constellations. With this focus, clouds can be blamed for causing monitoring issues despite their lacking intentionality. Hollow tree stems, or the inscription devices failing to see those hollow spaces, can be blamed for a failure to monitor degradation; both non-humans are to answer for the immediate difficulty of upholding previously strict requirements. The benefit of this perspective is not to shift blame from humans, but rather to shift focus from, for example, individual interests, class interests or dominant discourses, to one where altered ambitions and new negotiation outcomes can result from ‘obscure’ factors such

as cloud cover or hollow tree stems that can make it difficult for inscription devices to monitor forest trends, and for negotiators to adopt ambitious decisions. The next section commences this ANT-inspired analysis and includes one such obscure factor, namely cloud cover, which complicated the negotiations of what RL method to use when implementing REDD+.

7.2 Three reference level methods

It is against the emission trend set out through RLs that emission reductions are calculated in REDD+. As explained in chapter four, different methods can be deemed more likely to estimate a more accurate RL than others, because methods differ in terms of what factors and assumptions they include in the RL. Certain RLs do not include any assumptions aside from a historical trend, which means that the future trend is assumed to be the same as the past. Other RLs can include different assumptions, such as population growth or infrastructure projects, since such assumptions are thought to affect deforestation trends in the future. The accuracy of different methods can be tested. They can be deployed on particular forests for past time series, for example the forests in Brazil from 1990 to 2000, and one of the methods would come out from the test as more accurate. However, this does not mean that the method is more accurate if deployed now, because the factors influencing forest loss may change and this would affect the trend.

The previous chapter illustrated some of those factors that influence deforestation trends. It was argued that deforestation depends on local, domestic and international factors, and is affected by tenure legislation, market prices and illegal activities. Several respondents, some of which were supportive of REDD+, argued that a RL cannot predict how all those factors affect deforestation trends in the future, and that it therefore remains uncertain how accurate a RL is. One non-state respondent, for example, argued that a RL value ‘is not a true value. It is a guess

or an estimate, and how close that is to reality is unknown' (NGO Interview, 2013h). A state respondent specialising in technical issues was blunter:

I don't believe at all in reference levels. I don't think it is possible to project the pressure on forests. If you could do that you will need to know the price of agricultural commodities, you will need to know exchange rates, you will need to know a number of things and if you know them you can just go and play at Wall Street and make a fortune. (Party Interview, 2013e)

In other words, the multitude of factors driving forest loss makes it impossible to attain a true value of future trends. However, few submissions made such remarks. One of few exceptions was provided by Norway, who indicated the difficulty of knowing the future in their statement that '[e]stablishing baselines for emissions and related activities is always challenging due to uncertainty about the future' (UNFCCC, 2006d: 100). Most submissions and workshops, however, refrained from such considerations and instead discussed the vices and virtues of different RL methods (e.g. UNFCCC, 2007b).

There is thus a dichotomy between respondents and official UNFCCC documents; while several respondents stressed that it is impossible to predict the future with precise values, the documents focused less on such discussions. One respondent argued that submissions must refrain from discussing uncertainties in order 'to give some sense of comfort and confidence to the people in aid and in climate to justify spending to taxpayers' (Party Interview, 2013e), and another called it an 'obsession to quantify things into numbers' (NGO Interview, 2013h). However, the whole architecture of REDD+ also necessitates exact values, because emission reductions cannot be measured against a future projection with a degree of uncertainty in its value. That would reproduce the degree of uncertainty into the amount of tCO₂e and carbon

credits produced, and trading cannot be undertaken based on uncertain values. In other words, the RL and carbon credit architecture demand precise numbers as an operational requirement.

The uncertainty of future scenarios must, however, not necessarily lead to a rejection of RLs altogether. It can still be argued that RLs fulfil a useful function, for example for purposes of approximation. The argument here is thus not that RLs are redundant, but rather that discussions of inherent uncertainties are not well articulated in the analysed documents, and this is a necessity. The unavoidable complexity of the future must be conveniently neglected if carbon credits measured against a RL are to be produced with exact values. Omitting such discussions works to focus attention on what methods to use and what type of data to include in order to produce the most reliable RL. In other words, the type of discussion that was pursued was within the rational confines of creating exact values, whereas discussions of inherent uncertainties were mostly bracketed. The former type of discussion is a technocratic exercise to render carbon tradable based on rigorous quantification procedures, whereas the other type questions the very possibility of precise carbon quantification and was therefore not further pursued.

The RL negotiations thus concerned what method to use, and most negotiators argued that it was necessary to adopt a standardised RL method. The sixth point of the indicative guidance reprinted above specifies that emission trends should be based on historical data and that 'national circumstances' should be taken into account. This is one very general phrasing of a RL method that is explained further below. Negotiators considered a range of further methods, but most can be grouped into two other method categories; one strictly historical and one that disbands with the requirement of historical data.

The strictly historical method is the most basic and it uses the average annual deforestation rate of the past to calculate the RL. It hence assumes a future trend of deforestation

that is a direct continuation of the past trend. Submissions generally indicated that the RL should be plotted based on the past ten years of deforestation, but some argued that five years can be used as a minimum (UNFCCC, 2007c, f, 2008g). A workshop undertaken in 2007 concluded that one of the virtues with historical RLs is that they ‘would ensure that baselines are not based on hypothetical assumptions or future developments’ (UNFCCC, 2007b: 12). This statement is more a critique of other methods than an argument for using a historical method. It suggests that methods factoring in different assumptions, such as population growth, can do so in a manner that overstates future deforestation trends. Such an overstatement would result in a greater potential to mitigate emissions and therefore produce more carbon credits.

The same workshop, however, also indicated that it may be suitable to factor in such assumptions as they could cater for a more accurate RL. For example, if a highway is planned through the Amazons and this is known to result in substantial deforestation, then the RL may be more accurate if such assumptions can be included. A stark formulation of this argument came from countries of the Congo Basin in their critique that ‘reference scenarios based exclusively on historical data seriously undermine countries of the Congo Basin’ (UNFCCC, 2008g: 25). These countries have had low historical levels of forest loss, but they expected an increase due to population growth and industrial development (NGO Interview, 2013c). If such factors are not considered in the RL, these countries would have to mitigate emissions in relation to a trend of low levels of forest loss and this would entail a very slim mitigation potential for these countries expecting more deforestation, and hence little economic benefit from REDD+; this is why they felt undermined.

A different problem with a historical RL is that it necessitates historical data of deforestation trends. While such data can be obtained from forest inventories, an evaluation of the status of forest inventories show that roughly 50% of non-Annex 1 countries, with a sample

size of 99 countries, have none, limited or some existing inventories, whereas only 20% have good to very good inventories (Romijn et al., 2012). Inventory systems can of course be improved, but it would be costly and take time, and a historical method necessitates a functioning inventory system and data collected over a period of five to ten years. The remaining option is to use historical satellite data as a basis for constructing RLs. Satellites with mid-resolution remote sensing capabilities have been in space since 1972, and such sensors are a primary tool to map changes in forest cover on a landscape level. The 1972 satellite was launched by the National Aeronautics and Space Administration (NASA) of the USA and was the first of seven in the now called Landsat series that circles the earth assisting countries to monitor deforestation (UNFCCC, 2009a, GOFC-GOLD, 2014). These satellites provide near global forest coverage for a set of past dates that is free of charge and available in the form of downloadable web resources. Many Party and non-state actors argued that this data will ‘serve a key role in establishing historical deforestation rates’ (GOFC-GOLD, 2014: section 2.1.2.4.3).

However, the road from attaining this data to constructing maps indicating trends in forest loss is long and arduous, where countries must acquire the suitable technical capacity to interpret and verify the data. Moreover, clouds made it difficult to take good pictures over some areas. The Global Observation of Forest and Land Cover Dynamics panel (GOFG-GOLD) is an admitted observer organisation to the negotiations, but they are also an intergovernmental organisation associated with the UN that works to provide a ‘consensus perspective’ of the remote sensing community on satellite and air-based monitoring devices. They acknowledged that ‘[i]n some parts of the humid tropics (e.g. Central Africa) persistent cloudiness is a major limitation to using these [satellite] data’ (GOFC-GOLD, 2014: section 2.1.2.4.3). Documents provided by the Secretariat reach similar conclusions. They argued that ‘[f]requent cloud cover over tropical forested areas often reduces the utility of remotely sensed data from optical

sensors' (UNFCCC, 2006a: 13). The difficulty they articulate is that clouds were hovering over tropical forests as the sensors on the satellites were taking snapshots, prohibiting forests from being inscribed in a manner where forest trends can be assessed to an extent necessary to establish RLs in certain geographical regions. Deficient forest inventories in combination with troublesome clouds therefore allowed forests to resist enrolment in historical RLs, which meant that a network constellation supporting a historical method was vulnerable in the intersection of inscription devices and forests.

This problem was also mentioned by Parties in their submissions. One of several Parties expressing this concern was Colombia who argued that

[a]lthough we recognize the high value of technology that could be used for REDD such as remote sensing analysis, we would like to point out that relying heavily on these tools brings problems such as limiting the number of parties due to its cost and lack of installed capacity and countries with abundant cloud cover over forested areas. (UNFCCC, 2008g: 8)

It was, however, often argued that optical sensors can be complemented with radar and other sensors. The Secretariat argued that 'Radar and Lidar sensors can be used where cloud cover prevents the analysis of optical satellite data, but they currently do not have the global coverage necessary for widespread use'. (UNFCCC, 2006a: 20, see also GOFG-GOLD 2014, ch. 2.10 for a more recent status of evolving technologies). Costs and availability were two problems with more efficient sensors based on other techniques and, as with the construction of forest inventories, a historical method relies on first attaining the capacity and then undertaking monitoring for a number of years. New sensors that potentially enables continuous monitoring where there is cloud cover cannot complement cloudy pictures taken in the past.

These issues do not entail that RLs informed by historical data are an impossibility, but it suggests that countries would have to improve their technical capacity sufficiently to facilitate

a five to ten year period of continuous forest monitoring, which may push back the start date for when countries can partake in REDD+, or alternatively, that low quality ‘cloudy’ data with high uncertainties is used initially and improved over time (UNFCCC, 2009f). Clouds were thus articulated as a non-human that upset the network constellation of the BAP in which the use of historical data is suggested. They were understood to lower data quality if a historical method is used, which would create uncertainty within the plotted trend. This, in turn, runs counter to the aspiration with REDD+, which is a mastery of carbon flows where precise quantities are sequestered, measured and traded. The adoption of the BAP relied on clouds not being troublesome to the extent that a historical RL method would be unworkable. However, several Parties and non-state actors articulated issues with clouds, which meant that the clouds, despite any form of intentionality, were bestowed a form of disruptive agency to suggest alterations to the proposed RL method.

The combination of issues with a historical RL method made negotiators hesitant to adopt it as the method to use when implementing REDD+. However, the other two methods also had their fair share of issues. One of them, which can be called a modelling method, is less affected by the issue of cloud cover, because it is not mandatory to base it on historical data. In its place, it uses models simulating future trends based on input assumptions of factors driving deforestation (Huettnner et al., 2009). The models can be based on historical data, but Herold et al. (2012) suggest that the basis is normally land rent, including the supply and demand of new land for agriculture, where the supply is modelled on factors such as infrastructure availability and land productivity. This method thus allows the past to be disregarded, whereby cloud cover in past time series would not be an issue. Instead, it considers available forest resources and a range of factors that are assumed to affect those resources, and on such a basis model future forest trends.

Participants of a workshop undertaken in 2007 highlighted the potential benefits that could accrue from such models, stating that they ‘would benefit from the improved knowledge about the drivers of deforestation and improved capabilities to make predictions’ (UNFCCC, 2007b: 12). In other words, the critique of the historical method that it could undermine countries of the Congo Basin because it omitted future factors likely to influence forest loss, is something that this method escapes since it can take into account relevant country specific factors. However, this is also the method that was most directly critiqued. At the same workshop, for instance, ‘concerns were expressed with regard to the hypothetical character and the possible risk of such projected baselines being “inflated”’ (UNFCCC, 2007b: 12), by which is meant that emission trends are artificially overstated to produce more measured emission reductions, and hence more carbon credits and monetary returns.

Two years later, minutes from a similar meeting pointed out ‘several weaknesses of modelling approaches to reference emission levels’ (UNFCCC, 2009f: 7). These weaknesses result from challenges to establish the causal importance of the different factors that may drive deforestation, and such issues produced the assessment that ‘obtaining accurate results from pure modelling approaches can be difficult’ (UNFCCC, 2009f: 7). A non-state respondent considered the negotiations of this method and argued that

the amount of assumptions that would have to go into modelling ... would make it difficult for governments to know how the baselines were being set, or if they were setting it themselves, very easy for them to play with it, and so it [the method] is generally fairly rejected. (NGO Interview, 2013h)

This method was more directly critiqued than the first method. The problem was that it sought to factor in many drivers in complex models to estimate future forest trends, and this complexity was believed to open up venues for governments to ‘inflate’ or ‘play’ with RLs. Such issues

were considered all the more serious because REDD+ was by most negotiators envisioned as an offset mechanism. Inflated RLs would produce more carbon credits, and those credits would result in less reductions of fossil-based emissions in Annex 1 countries.

The remaining method was the one suggested in the BAP. It relies on historical data like the first method, but with national circumstances taken into account. There is, as of 2015, no consensus concerning what ‘national circumstances’ designate at the UNFCCC. One interpretation of the concept is that Parties should be able to suggest country specific factors, such as expected population growth or planned infrastructure projects, when they calculate the RL, which they deem would alter future emission trends. In this interpretation, the ‘overall rationale for inclusion of particular national circumstances is to generate more accurate and precise ... predictions’ (Herold et al., 2012: 294). This means that the method considers an unspecified range of factors driving deforestation in combination with a historical trend, where the factors are meant to create a more accurate RL.

Many Parties and non-state actors supported a careful consideration of national circumstances in RLs based on historical data, because they argued that it is possible to assume with reasonable accuracy how certain drivers of deforestation influence emission trends in the near future (UNFCCC, 2006d). While expressed by many, one of Japan’s submissions illustrates the rationale well:

In countries and/or regions where the history of forest exploitation is rather short so that present level of deforestation ... is not very significant but large scale exploitations are foreseen, future prospects of socioeconomic trends could also be reflected when setting the reference level. (UNFCCC, 2008g: 36)

National circumstances thus equal the incorporation of a range of factors likely to influence future deforestation trends. While these very factors could make the method vulnerable to the

critique of inflated RLs where emissions are overstated, the method was critiqued far less than the second method based on modelling, potentially because it would have a firm anchor in historical data. However, given the reliance on such data, it would experience the same problem as a strictly historical approach in terms of low quality data as a consequence of clouds.

No method was in other words considered perfect; each had its individual issues. The specified issues all have their roots in measurement accuracy. For example, inflated RLs can result in overestimated emission trends and cloud cover difficulties may result in accuracy issues. The objections expressed by the Congo Basin countries can also be related to measurement accuracy because their argument was that historical RLs omit factors that will influence deforestation trends. What made their objection unique was, however, a wish to intentionally increase pressure on their forests to attain economic growth and sustainable development. This is where the accuracy principle joins with another principle, namely the principle of *common but differentiated responsibilities* (CBDR) enshrined in the Convention text together with an acknowledgement that non-Annex 1 countries have legitimate priority needs to sustain economic growth (United Nations, 1992). The Congo Basin countries suggested, based on this principle, a development adjustment factor (DAF) which is to acknowledge that

per capita emissions in developing countries are still relatively low and that the share of global emissions originating in developing countries will grow to meet their social and development needs, including those from land use change and deforestation (UNFCCC, 2007c: 40).

A respondent elaborated on the DAF and explained that the Congo Basin countries felt that because

they hadn't had enough development to plunder their forests, they should be allowed to do that to some degree ... which would suggest that they actually get to increase their emissions above their historical baseline and still get REDD+ credits for not increasing as much as they would have [without REDD+]. (NGO Interview, 2013h)

In other words, the adjustment factor proposes that certain countries can set a higher RL to allow for social and development needs, where forest loss is factored in as a consequence of those needs. This factor would be a national circumstance and could be argued to result in more accurate emissions estimates, but its foundation is equity rather than accuracy. How the DAF would be applied in practice was less detailed, but the implication for RL methods is that it would add a moral dimension to the argument of not restricting RL methods to a strictly historical approach since, as has been argued, it would clearly not benefit certain countries. The two latter methods, on the other hand, would be able to factor in this DAF in different ways, since it can be considered a national circumstance, or added as a factor to the modelling method.⁴⁰

The strictly historical method was, in this regard, further critiqued based on the DAF, while the method based on modelling was most openly critiqued for leading to inflated RLs. The method based on historical data and adjusted for national circumstances would suffer from low quality data as a consequence of clouds in certain regions, but few submissions understood it to lead to inflated RLs. When a decision was taken in 2009, it stated that *'developing country Parties in establishing ... forest reference levels should do so transparently taking into account historical data, and adjust for national circumstances'* (UNFCCC, 2009e: 12).

⁴⁰ It should, however, be noted that a strictly historical method could be used with the DAF if the RL is split up in two separate benchmarks; one for emission reductions and one for payments that is set differently in order to accommodate the DAF. Such a split has been considered (Herold et al., 2012), but it has not been recognised in UNFCCC decisions as it concerns payments that relate to ongoing debates on how REDD+ will be financed. Because it was not recognised at the time, the DAF still weighed in *against* a strictly historical approach.

In other words, the third RL method managed to enrol the support of all Parties. It follows that the potentially disruptive effects of clouds did not affect negotiators to the extent that they had to abandon the RL method of the initial network constellation. While the constellation was vulnerable in the intersection of forests and inscription devices, the other constellations broke down. The one supporting a strictly historical method likely did so because it could not enrol the Parties that felt undermined and advocated the DAF, and the one supporting the modelling method because it could not enrol Parties arguing that it would be the method most vulnerable to inflated RLs. This indicates that the issue of cloud cover was considered less arduous than issues causing breakages in the other constellations, and this despite the worry that historical data could be of low quality causing accuracy issues. This rationale was confirmed in an expert meeting dedicated to reference levels shortly before the decision was taken, in which

[i]t was acknowledged that international data and information on forest cover and changes are available. Although there are concerns about the quality of such data and associated uncertainties, the experts were of the view that they could be used initially to make conservative estimates and as a basis for establishing reference emission levels. (UNFCCC, 2009f: 8)

Concerns regarding data quality and uncertainties were acknowledged, but it was still argued that the data can be used initially while seeking to improve quality over time.

Parties articulated issues affecting data quality for all methods, which illustrates a much more sombre negotiation tone compared to the confidence of the initial years. Such uncertainties run counter to what has been called the mastery of carbon stocks and flows, which designates the ability to quantify emission reductions with precision and produce compliance grade carbon credits. The issue that was given the strongest focus in this section was the one perceived to result from cloud cover. Clouds were thus a factor that advanced a challenge within the ‘science

of the discourse' (Nielsen, 2013: 11). They allowed the guidance of the BAP to be politicised and taken up for reconsideration because clear issues had been articulated with governing emission reductions against a historical RL. Negotiators chose, nevertheless, to ground RLs in historical data and thus subjugate this challenge like they had done with many others analysed in previous chapters. They also chose to allow for the consideration of 'national circumstances' because the negotiations are based on consensus and several countries strongly rejected a strictly historical trend based on the argument that would not provide them with suitable economic incentives to participate in REDD+.

The BAP suggested that historical data should be used, but also that emission estimates should be transparent, verifiable and consistently estimated over time. The RL decision confirmed the former, but low quality cloudy data may, as argued by Parties, prohibit the latter in certain areas. A crucial factor that allowed Parties to stick with the BAP despite this issue was that there were several years between the negotiation outcome in 2009 and a possible date when REDD+ may be operational. Negotiators could thus remain wedded to their faith in technological innovation and argue that data improvements will occur over time, and thereby disregard the interfering behaviour of clouds. The problem with the modelling method differed from the other two methods. A future state in which the inflation issue would be solved could not be appealed to, because it is caused by human factors. Parties themselves or others that constructed RLs were argued to be able to inflate the RLs for monetary gain. In other words, the mastery of carbon trends where exact quantities are measured and commodified could *always* be questioned with such a method. Negotiators thus preferred an option that accepted issues with low-quality historical data for what was believed to be an interim time period, while rejecting the option where humans could influence the data for an infinite time period. The decision thus allowed negotiators to argue that current issues could be solved through

technological innovations, which has the consequence of allowing them to uphold the necessary ambition to master carbon stocks and flows.

7.3 Conclusion

This chapter began to address the research question: *How is REDD+ carbon rendered tradable through the negotiations?* The first section did so by analysing how Parties evaluated their abilities to monitor emissions from forests the early years of the negotiations. The section concluded by arguing that Parties assumed that inscription devices could be deployed to measure emissions with confidence from forests. If the technology was not present at the time, they showed great confidence that technological innovation and capacity building would enable them to undertake rigorous monitoring in the near future. Parties thus assumed that they would soon be able to quantify carbon stocks and flows to the extent necessary to render carbon tradable.

This resulted in the adoption of the Bali Action Plan and the following section analysed how negotiators fleshed out the RL method guidance of that plan. The analysis was of a technical discourse, which had the consequence that non-state actors were less engaged with the negotiations to challenge outcomes. Instead, ANT was used to suggest how clouds offered challenges to two of the RL methods. They hovered in the way of satellites taking snapshots and negotiators argued that this created quality issues in the historical data necessary to base the RLs on. Uncertainties were, however, articulated for all RL methods and this moderated the earlier statements that carbon quantities could be measured with confidence.

Negotiators nevertheless adopted a decision that reaffirmed the RL method of the BAP, which instructs Parties to construct RLs based on historical data and adjust them according to national circumstances. This method was adopted, it was suggested, not because negotiators had

solved the problems presented to them, but because they wanted to avoid methods providing little economic incentives for certain countries to partake in REDD+, and methods that could be inflated by humans and therefore perpetuate uncertainties. There was also a time lag between the adoption of the decision and the date when REDD+ may be operational, which allowed them to remain wedded to their belief in technological innovation and data improvements, and thereby disregard monitoring uncertainties for the time being. In other words, they could still aspire to master carbon stocks and flows. However, the next chapter considers how it became increasingly difficult to uphold this aspiration of mastery.

Chapter 8

A WANING MASTERY OF CARBON STOCKS AND FLOWS

This chapter analyses how Parties' aspiration to master carbon stocks and flows waned throughout the negotiations. It takes off where the previous ended and analyses how the monitoring criteria of the Bali Action Plan was fleshed out in three further negotiation outcomes. The first two topics are forest degradation and carbon pools. The analysis considers negotiations leading up to decisions specifying whether degradation and what carbon pools should be included in REDD+ on a compulsory basis. A final section analyses the negotiations regarding how deforestation and degradation trends should be converted to carbon quantities. In other words, this section analyses whether the IPCC's approach of applying higher 'tiers' for significant emissions and pools should be followed by Parties implementing REDD+. The negotiation outcomes together produce a partial representation of forests, which instructs Parties what parts of forests to include in REDD+ and the level of rigour required to measure those parts. Those measurements may later be turned into carbon credits and sold to Annex 1 countries. This chapter therefore also addresses the research question: *How is REDD+ carbon rendered tradable through the negotiations?*

The analysis is carried out by drawing on ANT, which facilitates a tracing of how Parties themselves articulated issues with costs, capacities and non-humans, and an impression of how those issues affected the decisions they adopted during the negotiations. The impetus for this analysis is that carbon credits always embody precise quantities of avoided emissions. As previously argued, it is not possible to trade credits based on uncertain amounts. From the point of view of market actors purchasing and selling credits, the different choices, simplifications and exclusions made by Parties when they adopt monitoring guidelines, and implement

monitoring systems based on those guidelines, are likely to be hidden from view. They are, to quote MacKenzie (2009: 446), ‘black boxed’ unless those actors would want to revisit the records of the negotiations and REDD+ projects. This analysis therefore re-opens a part of this box. It illustrates how the confidence of the early years waned when faced with monitoring issues and cost-efficiency considerations, and it suggests how those issues affected the monitoring guidelines. In contrast to the previous chapter, the analysis does not arrive at a particular RL method that allowed Parties to still aspire towards a mastery of carbon stocks and flows. Instead, this chapter gives an impression of how similar difficulties resulted in decisions where this aspiration was directly compromised, and which resulted in a scheme where parts of forests are not included and where carbon trends may not be measured.

8.1 The difficulties of measuring forest degradation

Forest degradation became part of the BAP in 2007. As suggested in the previous chapter, it was included because it can lead to substantial emissions if left outside of REDD+, which also means that an inclusion can result in economic benefits for countries reducing degradation. Another benefit is to avoid inter-activity leakage, which designates leakage between deforestation and degradation. To exemplify, deforestation is by most definitions understood to occur if crown cover diminishes below a certain threshold. If countries include deforestation but not degradation, they could reduce those harvesting operations leading to deforestation where the crown cover threshold is overstepped, and therefore receive payments for their efforts. However, because degradation is not included, they could still undertake extensive selective harvesting operations as long as they stay on the right side of the threshold, resulting in countries receiving payments for not deforesting while simultaneously degrading their

forests. This produces an incentive structure to decrease deforestation and increase degradation. If Parties would act on those incentives, then inter-activity leakage is occurring.

The possibility of inter-activity leakage was considered by a non-state respondent:

The question is if you can in fact demonstrate reductions in deforestation, is it possible that those reductions in deforestation can be completely ... leaked to increases in degradation? I suppose, and this is of course why there are arguments for requirements to include both. (NGO Interview, 2013d)

This issue was also discussed in SBSTA workshops. For example, in 2007 it was argued that ‘consideration of forest degradation is important to ensure that any arrangement does not create perverse incentives that would allow forests to degrade to just below the deforestation threshold, thereby allowing Parties to gain benefits from not deforesting’ (UNFCCC, 2007b: 14).

In this regard, there were several arguments for including degradation in the BAP. After the BAP, however, degradation was not considered in terms of whether it should be included, but rather whether it should be compulsory or voluntary. This is an altogether different question, because the monitoring system required for degradation is far more expensive and difficult to institute than for deforestation due to measurement difficulties with available inscription devices. A state respondent highlighted this issue:

The tricky thing about degradation is that as of yet we are still not at the place where we can monitor it universally from existing satellites, like we are with deforestation. It’s more like local overflights and things, which gets really expensive. (Party Interview, 2013a)

Forest degradation does often not entail neat clearings that can be spotted from space. Fuelwood collection and logging operations can lead to degradation, but so can processes of decay and insect attacks that reduce carbon quantities, for example by hollowing out tree stems (Henry,

2010). To detect these varied degradation processes, ‘really expensive’ technologies complemented by sampling on the ground would be necessary.

To aid Parties in reaching a position on the topic, the Secretariat produced a technical paper in 2009 with up-to-date information on the costs and availability of relevant inscription devices. The publication included a table, adapted and simplified below in *table 3*, showing sensors of multiple resolutions for deforestation monitoring.⁴¹ The Secretariat drew on a monitoring guidebook created by the GOFC-GOLD (2008), arguing that the finest sensors would be needed for certain degradation activities, such as non-mechanised logging that cause little damage to the canopy cover. Medium-resolution sensors, including the Landsat series, were argued to capture activities causing larger disruptions to the canopy cover not counting as deforestation, but not all degradation activities.

Table 3: Sensors of multiple resolutions for deforestation monitoring, adapted from the Secretariat (UNFCCC, 2009a: 21)

Sensor and resolution	Examples of current sensors	Minimum mapping unit (change)	Cost	Utility of monitoring
Coarse (250–1000m)	Envisat-MERIS	10–20ha	Low or free of charge	Identification of large clearings
Medium (10–60m)	Landsat TM or ETM+, & Terra-Aster	0.5–5ha	Free of charge, US \$0.02/km ²	Primary tool to map deforestation
Fine (<5m)	IKONOS QuickBird Aerial photos	<0.1ha	High to very high, US \$2–30/km ²	Detailed (local) surveys

The table indicates that very costly inscription devices would have to be used to enrol degradation. The costs indicated in the table were specified in 2009 and the general assumption was that innovation would drive down costs. Nonetheless, the figures may have had a discouraging effect. To exemplify, the Congo Basin rainforest is estimated to encompass 1,79

⁴¹ The table is used to exemplify price differentials as of 2009 and does not include all sensors and cost specifications of the technical paper. For details see: UNFCCC (2009a: 21-22).

million square kilometres (Mayaux et al., 2013) and if the average cost of degradation monitoring is estimated to be US \$15 per km², then the total cost for an overflight would be roughly US \$26 million. This figure represents only one overflight in a system requiring continuous monitoring to detect trends. Moreover, costs were considered by Parties without a clear indication of the scale of future revenue from carbon credits, because the price they would demand, either from a market or a fund, was dependent on further negotiations. However, it is likely that Parties were aware that they would not have to use this expensive fine-scale monitoring equipment over their entire forest areas. A mix of monitoring methods would likely be employed, combining different sensors with ground-based sampling procedures. While cost-efficient, it is also considered necessary to complement remote sensing with ground surveying to verify the data, as compounded in a decision on monitoring (UNFCCC, 2009e).

Costs and capacities to monitor degradation emerged as a more prominent issue compared to the early years of the negotiations. Being aware of the issue, a Party respondent argued that ‘there is a trade-off, if we were requiring it [mandatory inclusion of degradation], you could be cutting the number of countries that could do it immediately down to quite low’ (Party Interview, 2013a). If degradation was made mandatory, lacking monitoring capacity and high upfront costs to attain such capacity, would exclude Parties from REDD+ and this would invite another issue, namely international leakage. This type of leakage was discussed in the previous chapter and it was meant to be solved through an ‘all in’ approach, where all Parties participate in REDD+ and monitor their forests on a domestic basis. If degradation is compulsory, however, it would not be feasible to solve the issue through an ‘all in’ approach until all countries have the relevant monitoring capacities and can partake in REDD+. In other words, while optional inclusion of degradation could lead to inter-activity leakage, compulsory inclusion could entail international leakage. The negotiators concerned with leakage were thus

stuck between a rock and a hard place, all because degrading forests could not be easily enrolled with available inscription devices.

Discussions continued on the topic and degradation became increasingly framed as a cost-benefit issue. For example, minutes from a workshop ‘pointed out that the costs of measuring emissions from forest degradation should be carefully weighed against the requirement to achieve accuracy of measurements’ (UNFCCC, 2008e: 11). A less optimistic attitude towards the possibility of enrolling degradation could also be seen in submissions. A greater emphasis was placed on potential difficulties, including a lack of historical degradation data for RLs, a lack of tier 1 default values for degradation, and, most prominently, a general lack of necessary capacity to undertake continuous degradation monitoring (UNFCCC, 2008g, e, 2009f, j). In essence, Parties began to realise that the awaited developments in monitoring technologies would not materialise as quickly as expected, and therefore that it would be far from easy and cost-efficient to enrol degradation.

Cuckston (2014: 95) has analysed a part of this empirical material through an ANT lens and argues that ‘[t]he tropical forests themselves are thus seen to be resisting attempts to pacify their complex agencies ... such as their behaviour in relation to degradation’. Cuckston argues that degrading forests themselves resisted inscription, and this statement follows closely from the use of ANT in this study. Through such a lens, the varied process of forest degradation was perceived to resist enrolment with available inscription devices. Forest degradation is an unpredictable and dynamic process, and inscription devices were not considered advanced enough to inscribe that process or, alternatively, not available or cost-efficient to the extent necessary. Degrading forests therefore resisted inscription and, as a consequence, resisted enrolment in a network constellation supporting a mandatory decision on degradation monitoring.

The resistance that degradation offered did not have exactly the same origin as that of clouds analysed in the previous chapter. In the latter case, it was Parties who had constructed a BAP that relied on clouds not being particularly troublesome, but they interfered and lowered data quality, and therefore offered a non-human form of resistance to historical RLs. The BAP did not rely on degradation being manageable and easy to inscribe. The previous chapter showed that some were of that opinion, but more submissions articulated a faith in technological innovation to successively close capacity gaps and facilitate the enrolment of degradation. In other words, clouds became an issue because it was not factored into the BAP, whereas degradation was factored in. Instead, it became an issue when the assumed innovations in monitoring techniques did not materialise to substantially drive down costs and increase availability. The consequence of this lack of innovation was that degrading forests were perceived to resist enrolment in a network constellation favouring a mandatory decision.

As previously argued, a defining feature of such constellations is that all Parties must be enrolled. A decision is unlikely to pass if any Party voices opposition to it. Individual issues within countries, such as difficulties with degradation monitoring, can be amplified in a UNFCCC setting because it only takes a few countries identifying such difficulties to affect the whole constellation. Latour's (2005: 213) concept of 'attachment' highlights this well. Latour argues that agency results from attachments; the more an actor is attached to other actors, the greater the possibility to act. In isolation little agency is possible, whereas the difference an actor can make is greater if it is connected to others that can be affected. In a one-country perspective the issue may be tackled and degradation eventually enrolled. When attached to a network of Parties, however, the challenges that degradation poses are more difficult to tackle since the constellation can be broken by any country that finds the issue too problematic.

With these considerations in mind, the SBSTA put out a call for submissions in 2011 where Parties were invited to submit their ideas on the *scope* of RLs (UNFCCC, 2011c). This meant that Parties and non-state actors were asked to consider whether or not degradation should be included on a compulsory basis. An expert meeting took place the same year, in which many capacity-related issues were rehearsed, with discussions also covering the potential dangers of not addressing degradation, including inter-activity leakage (UNFCCC, 2011d). Moreover, the meeting considered alternatives to direct monitoring, such as the use of proxies to model degradation. It was suggested that when direct monitoring is not possible, proxies indicating degradation, for example proximity to settlements or infrastructure, can be used to estimate instead of measure degradation. While it would not provide precise measurements, it would be ‘pragmatic and results-oriented’ (UNFCCC, 2011d: 8). There was also the ‘view that reducing emissions from forest degradation should be included only when it is a significant source of emissions’ (UNFCCC, 2011d: 11). As elaborated in chapter four, the IPCC suggests that higher tiers should be applied when estimating emissions from activities deemed significant. The argument presented during the expert meeting was, however, not that degradation can be estimated with a lower level of rigour if it is not a significant emission activity, but rather that it can be excluded altogether.

The suggestions to use proxies and exclude ‘non-significant’ emissions should be understood as compromises that sought to be more lenient than compulsory monitoring of degradation, but also more rigorous than a complete exclusion of the activity. The two suggestions are thus clear indicators that monitoring difficulties remained and that Parties struggled to include degradation in REDD+. Of the countries choosing to comment on the scope of RLs, only Norway explicitly argued that degradation should be compulsory. A submission by 19 non-Annex 1 countries was slightly ambiguous but it argued in one section that RLs

‘should include emission reduction[s] from deforestation and forest degradation’ (UNFCCC, 2011e: 10). Other countries were less adamant on a compulsory inclusion of degradation, and instead argued that it should be an aspiration given present monitoring challenges. A final view was that it should be compulsory if it is a significant source of emissions (UNFCCC, 2011e). Of non-state submissions, many refrained from voicing opinions on whether degradation should be mandatory or not. However, the Ecosystem Climate Alliance advanced the following statement on the dangers of excluding degradation:

Any attempt to limit consideration of the broad and complex field of forest degradation to the single extreme form of deforestation can be expected to lead to perverse outcomes, as it turns a blind eye to the degrading effects of all those forest management activities that do not lead to deforestation ... This should be regarded as an unconscionable simplification (ECA 2011c: 8).

The various arguments that were advanced can be conceptualised as two network constellations, one favouring a lenient decision and one favouring a compulsory outcome. The former was supported by arguments of capacity constraints, monitoring difficulties and international leakage. As detailed above, degrading forests were also perceived to militate against a compulsory decision. The other constellation was supported by arguments regarding further emission reductions, prospective economic gains and inter-activity leakage. However, degrading forests were also articulated within this constellation. Their emission behaviour was utilised a few times to state that a compulsory decision is necessary in order to avoid negative consequences. Degrading forests were thus articulated in two contradictory manners in the negotiations; both as a factor militating against inscription and a factor that must be inscribed to ensure the viability of REDD+. ⁴² This difference in articulation is a consequence of the aims

⁴² The below section on carbon pools includes an extended discussion on this type of articulation of non-humans.

of the constellations. Humans define the constellations and their strategic ends, and the agency of non-humans is dependent on how they are articulated within them by the participating humans.

When a decision was agreed on the topic in 2011, it gave Parties the freedom to choose what emission activities to include in the RL, but they should also provide *'the reasons for omitting ... [an] activity from the construction of ... forest reference levels, noting that significant ... activities should not be excluded'* (UNFCCC, 2011b: 19). The decision corresponds to the argument that degradation can be excluded, but only if it is not a significant source of emissions. While this is more ambitious than letting degradation be voluntary, it is also less ambitious than the BAP where it was included. The decision can therefore be understood as a compromise between the two constellations. It incorporates the IPCC's approach of key category analysis that was included in the BAP. However, instead of allowing a lower level of rigour (e.g. tier 1) when estimating non-significant emissions, it allows for the exclusion of the activity altogether. When degradation is not deemed significant, all those emissions not leading to deforestation can be excluded from REDD+.

The decision will have the consequence that degradation has to be included in countries where the forestry sector is responsible for considerable emissions, including Indonesia and countries of the Amazon and Congo Basins. However, degradation may be excluded in countries where the forestry sector is small compared to other sectors included in the key category analysis. Another consequence of the decision, according to arguments considered above, is that inter-activity leakage may increase in cases where degradation is deemed non-significant and excluded. Drivers of deforestation will be addressed and this may have the consequence that some of those drivers turn to activities resulting in degradation, since it would not be monitored and accounted for. However, the same decision also specifies that Parties should

update their *‘reference level periodically as appropriate, taking into account new knowledge, new trends and any modification of scope and methodologies’* (UNFCCC, 2011b: 18). This requirement of updates could be a way to pick up on inter-activity leakage if such leakage has the consequence of making emissions from degradation significant.

These negotiations differed from the early years considered in the previous chapter, where some argued that degradation could already be monitored and others were confident that it could be done in the near future with the help of improved technologies to close capacity gaps. This faith in technological innovation waned throughout the negotiations, which meant that it was increasingly difficult to adopt a mandatory decision. The decision constitutes a compromise and it detracts from the aspiration to master all carbon stocks and flows in forests. Instead of quantifying all changes in carbon stocks, the new ambition is to measure changes in large-scale forest clearings, while neglecting those from non-significant degradation activities. All carbon emissions are not administered and governed through REDD+, and it would therefore not be fitting to use the ‘carbon panopticon’ metaphor to describe how carbon is rendered tradable. On the contrary, in the same way REDD+ articulates certain drivers of deforestation while subjugating others, it inscribes certain emission activities while excluding others. The chapter now turns to a further deviation from this aspiration of mastery.

8.2 Carbon pools and peatlands

When discussing deforestation and forest degradation it may be assumed that carbon is primarily emitted from the stems and branches of trees, the above-ground biomass pool. However, emissions occur from all carbon pools. The amount of carbon residing in pools other than the above-ground biomass pool differs considerably between forest types and regions. For

example, a figure from Bolivia suggests that below-ground and soil carbon constitutes 26% of total carbon quantities in certain forests, in contrast to 53% in some Indonesian forests (GOFC-GOLD, 2014: section 2.3.5.1.1). In other words, the amount of carbon not existing in the above-ground biomass pool can be very large, and on occasion constitutes the majority of carbon in forests. Carbon quantities are reduced in all pools when deforestation is occurring.⁴³ Conversely, if deforestation is reduced, Parties would produce more carbon credits if all pools are included.

Despite this economic incentive to include all pools according to BAP and IPCC⁴⁴ guidance, Parties and non-state actors considered this topic far less than degradation. Of the scant attention it received, a similar picture to the negotiations on degradation could be seen. On the one hand, there were those who adamantly argued that '[P]arties [should] incorporate all 5 carbon pools (including soils)' (ECA 2009b: 4) and, on the other, those who were more reluctant and instead focused on the monitoring-related difficulties of including all pools (UNFCCC, 2008g, 2009k). In other words, there were those who wanted to see all pools included, as well as those who preferred to lower the ambition of the BAP and have a voluntary inclusion, but most remained silent on the topic.

A Party respondent suggested that carbon pools was 'neglected or avoided because of the severe forest bias in climate change thinking', resulting in an apprehension that monitoring carbon pools other than the above-ground biomass pool is 'a very tricky business' (Party Interview, 2013d). Tricky or not, measuring many of these pools requires substantial on-the-ground efforts if higher tiers are applied according to IPCC guidance. Rigorous sampling regimes must be devised and while samples are dried to determine biomass for the dead wood

⁴³ The impact on carbon pools other than above-ground biomass is milder when degradation is occurring (GOFC-GOLD, 2014: section 2.3.5).

⁴⁴ See chapter four for IPCC guidance on emission estimates from carbon pools.

pool, they are subjected to laboratory analysis for the soil pool (GOFC-GOLD, 2014).⁴⁵ Romijn et al. (2012: 39) have assessed countries' capabilities to undertake such measurements and conclude that 'for many countries the capacity to estimate changes in carbon pools is still rather limited'. A lack of capabilities to measure carbon pools, and an apprehension that it can be difficult to attain such capabilities, may have deterred Parties from considering them at length in the negotiations.

While engagement had been lacking, it was prompted in 2011 when the scope of RLs was negotiated, because the scope concerns both activities and pools. Carbon pools were therefore also considered in the expert meeting conducted in 2011 and in some individual submissions that year. In the expert meeting, Parties discussed the effects of excluding certain carbon pools, and in particular

whether this would lead to perverse incentives⁴⁶ and, if so, how perverse incentives could be avoided. The experts noted that in most cases ... [p]roblems would arise only if a country does not include large carbon pools (e.g. soil carbon pool where there is deforestation) in which emissions are expected. (UNFCCC, 2011d: 10)

The gist of this quote indicates an approach akin to the decision on degradation; if it is not a large carbon pool with a significant impact on emissions, then it may well be excluded. One of the rationales for this approach is that the emission trends of the pools are largely assumed to follow each other, and not radically increase in one pool as a consequence of a reduction in another (GOFC-GOLD, 2014: section 2.3.5). It was suggested that degradation could increase as a consequence of reducing deforestation if the former is excluded from REDD+. However,

⁴⁵ The below-ground biomass pool is, however, most often not directly measured, and instead considered through a root-to-shoot ratio where the root is calculated as a ratio of the above-ground biomass (Mokany et al., 2006).

⁴⁶ Perverse incentives here designate incentives to emit greenhouse gases from an excluded pool while being credited for reducing emissions from another, thus compromising additionality.

the same is not likely with pools, because if deforestation decreases in the above-ground biomass pool (the trees), then it is highly unlikely that it would increase in the below-ground pool (the roots). This means that the risk of leakage between activities is not something that pools are generally subjected to.⁴⁷

The argument that non-significant pools can be excluded could also be seen in submissions. Another argument was that further pools can be added over time when capabilities have improved, which is another way of stating that certain Parties preferred to include pools on a voluntary basis irrespective of whether they are significant or not (UNFCCC, 2011e). A Party respondent attending the negotiations observed that ‘some countries were reluctant to take all pools into REDD+’, thus corroborating the resistance seen in the submissions (Party Interview, 2013d). The pools were, moreover, articulated as very difficult to monitor, thereby deterring from a mandatory decision in the same manner as forest degradation (UNFCCC, 2011e). Very few submissions were of the opposite opinion – that all carbon pools should be directly included on a mandatory basis – with exceptions including Australia (UNFCCC, 2011e).

The monitoring difficulties and the generally reluctant attitude of Parties suggest that a network constellation supporting a stringent decision was unlikely to be formed, and that more relaxed guidance would be agreed. However, a Party respondent argued that the issue of carbon pools became vigorously debated before a decision was to be taken. This was due to *peatlands*, a particular form of soil carbon (Party Interview, 2013d). The respondent, but also a range of state and non-state actors, stressed the peculiar emission behavior of peatlands and argued that their inclusion cannot be voluntary, which could be the case if relaxed guidance was agreed. The argument pursued was that peatlands do not only produce a substantial amount of emissions

⁴⁷ However, later in this section peatlands are discussed, which are assumed to have a different emission behaviour.

once (which is the case when trees are harvested), but rather that emissions can go on for decades or longer. The respondent, alongside a range of other actors, went on a campaign to get this message across in 2011 before a decision was to be taken. The expert meeting was used to educate attendees on what peatlands were and how they functioned, and non-state actors produced submissions that included elaborate graphs to explicate the peculiar emission behavior of peatlands and the implications of such emissions (ECA 2011a, c, b, Wetlands International, 2011).

It was argued that peatlands are ecosystems saturated by water, in which a long-term accumulation of dead and decaying plants forms a thick organic soil layer, which is known as peat (Wetlands International, 2011). Peat, therefore, belongs to the soil carbon pool, but these lands are also often populated by forests. The respondent explained that deforestation on peatlands is often associated with drainage because canals or ditches are used to float out trees. When drainage occurs, the organic matter of the soil pool starts oxidising and this leads to carbon emissions that can correspond to 20 tonnes of carbon per hectare, which can be compared to the above-ground biomass pool that may have a carbon content of between 100 and 200 tonnes per hectare (Party Interview, 2013d). However, the respondent continued, the difference is that while carbon is emitted once when trees are harvested, peatlands emit 20 tonnes of carbon yearly if drained, and it does not stop until the land is rewetted or until all peat have oxidised.

The respondent argued that emissions can continue for many years because peatlands are often between 10 to 20 meters deep in tropical areas, and when they have been drained they diminish by roughly 5 to 7 centimeters yearly through oxidation, potentially leading to extremely significant emissions. Peatlands are thus very carbon rich, and one submission estimated that they contain twice as much carbon as the entire forest biomass of the world,

while covering a much smaller part of the globe's land area (Wetlands International, 2011). The respondent and the submissions argued that if peatlands are factored into RLs, potentially very significant emissions can be reduced generating substantial amounts of carbon credits. Conversely, if not factored in, emissions can leak from these soils over long periods of time if deforestation occurs, compromising the additionality of carbon credits generated under REDD+.

These arguments and the knowledge of the emission behaviour of peatlands were not completely new and bestowed upon negotiators for the first time. (e.g. UNFCCC, 2007c). However, attention to peatlands increased over the years, with strong advocacy from the respondent and a set of non-state actors prior to the decision on the scope of RLs. They sought to secure a decision where all pools, or alternatively all significant pools, had to be included. Both decisions would factor in peatlands given that their emissions can potentially be very significant. The respondent argued that it was challenging to convey this argument despite the advocacy, because it requires 'a completely different way of thinking, and you do not get that into the negotiators' minds because everybody thinks that [the emission behaviour of] peat is the same as forests' (Party Interview, 2013d). The lack of suitable guidance in the IPCC's guidebooks did not make this challenge any smaller. The IPCC (2003) guidance for the soil organic material pool suggests that measurements should be taken at a depth from 30 to 100 centimeter. However, as the respondent argues, 'if you only look at the upper most meter then you only observe a decrease in the carbon content when the last meter of the peatland has arrived' (Party Interview, 2013d). Emissions from peatlands could, in other words, go on unnoticed with those IPCC methodologies. It may well have been difficult for negotiators to acknowledge the importance of peatlands if even the IPCC, who is generally accorded the attribute of an authority in the field, lacked suitable guidelines on the topic.

The emission behaviour of peatlands, and the arguments made by the group of actors cited in this, section are through an actor-network theory lens not treated as scientific facts, but rather as an enrolment strategy for a decision ensuring that peatlands are considered in REDD+. Before peatlands were promoted, they had no or little presence in any network constellation to influence decision-making on the scope of RLs. The advanced arguments, however, provided ‘new’ knowledge facilitated through a range of inscription devices that supported a network constellation favouring a stringent decision. It is a form of knowledge used to politicise the ‘field of visibility’, not by articulating forests as having further attributes than carbon, but by articulating certain forest soils as substantial containers of carbon.

If this knowledge is acknowledged within the constellation, it would give other negotiators a difficult time to argue for flexibility in terms of adding carbon pools, whether this concerns omitting pools or adding them later when monitoring capabilities have been improved. Knowledge had now been brought to the table suggesting that carbon in soils behave in a way where considerable amounts could be emitted over a long period of time. These biological processes could then potentially have a direct impact on decision-making, because the omission of the soil pool, in cases where countries have undertaken drainage activities on peatlands, could be a reason for questioning additionality and therefore also the legitimacy of future carbon credits derived from REDD+ projects. In other words, enrolling peatlands grants them within-network agency to resist a lax decision on carbon pools.

Conversely, if the enrolment strategy fails it could mean that countries reduce emissions in their above-ground biomass pools and receive payments for those reductions, while carbon emissions in parallel leak from peatlands. However, this leakage would not be acknowledged, since peatlands were not in the ‘negotiators’ minds’ as the respondent suggested, and would not be incorporated into the accounting frameworks of REDD+. The implication here is that for

non-humans to cause an effect on decision-making, they have to be transported to the arena of the UNFCCC and be acknowledged, otherwise they, along with their agency, fall outside of the REDD+ scheme (e.g. Law and Mol, 2001).⁴⁸

The respondent who argued strongly for a consideration of peatlands shared a narrative of the negotiations in which several Parties were opposed to including all pools, and where others were reluctant to promote the topic. The respondent explained that

it was on the basis of my repeated proposals at 2 o'clock at night, it was the last inclusion in the RL decision, that there is now a provision that ... significant pools and/or activities should not be excluded and the implication of the decision was that soils are in and only when soils and other pools are not significant, they may be excluded. (Party Interview, 2013d)

No other respondents provided details of the events taking place at 2 o'clock that night. However, the submissions corroborate firstly that many Parties wanted to have flexibility in terms of monitoring carbon pools, and secondly that considerable effort was made primarily by non-state actors to draw attention to peatlands. While it remains unclear how important the effort to incorporate peatlands knowledge into the constellation was for producing the decision, the outcome is more easily assessed: drained peatlands cannot be excluded because they are likely to lead to significant emissions.

The adopted decision reads that Parties should state '*the reasons for omitting a pool and/or activity from the construction of ... forest reference levels, noting that significant pools and/or activities should not be excluded*' (UNFCCC, 2011b: 19). Carbon pools are incorporated into the same decision as activities and are thus treated in the same manner; non-significant

⁴⁸ Law and Mol, two ANT-associated theorists, prefer based on such ideas to talk about scientific facts in terms of their ability to be transported instead of their ability to be generalised.

pools and activities can be omitted.⁴⁹ How Parties experienced the difference between omitting pools and activities has been discussed. Leakage between pools was considered a lesser issue than between activities, which suggests that Parties understood the decision to be less hazardous for pools from an additionality perspective. The soil pool could, however, be considered hazardous to exclude if countries have peatlands, but that pool will as argued be included as a consequence of the decision.

The decision marks another step away from the BAP and its indicative guidance that all pools should be monitored. The above discussion provides anecdotal suggestions that the carbon pool guidance could have become even more relaxed had it not been for the enrolment strategy of peatlands, which is likely to have broadened the field of visibility to include these carbon filled soils in REDD+. Monitoring peatlands would require capacity development but also knowledge of relevant monitoring techniques. Fortunately, practitioners may now refer to the recent guidelines developed by the IPCC (2014) for wetlands, which contain detailed guidance for peatlands.⁵⁰ In other words, just like peatlands are likely to have affected decision-making under the UNFCCC, they have also encouraged the IPCC to produce additional guidelines to facilitate their enrolment.

Both this and the previous section illustrate how the negotiations resulted in decisions that produce guidelines in which a particular representation of forests is created. It is not a ‘carbon panopticon’ where all emissions are mastered, as was often stated in general but confident terms in the early years of the negotiations. Rather, the guidelines compartmentalises forests into different activities and pools, different compartments of carbon, and some of these compartments were exempted from compulsory monitoring based on cost- and monitoring

⁴⁹ Although as explained in chapter four, the significance criteria differ for pools and activities.

⁵⁰ There are also other IPCC (2006) guidelines, with additional wetlands supplements, that Parties are assumed to confer, on a voluntary basis, in conjunction with the GPG-LULUCF report discussed here.

considerations as well as emission volumes (e.g. the significance criteria). In other words, the panoptic all-seeing gaze is replaced by a selective surveillance system centred on the worst emitters. The analysis has so far not considered carbon quantification within these different compartments, and it may be assumed that Parties retained the BAP guidance that applied the IPCC's tiered approach given that this quantification is crucial for the creation of carbon credits. However, the next section analyses how compromises were made there too.

8.3 IPCC tiers: quantifying carbon without measuring it?

Fleshing out the indicative guidance of the BAP resulted in decisions to permit the omission of non-significant pools and activities. It is therefore likely that only those significant will be included in REDD+. As detailed in chapter four, the IPCC recommends that higher tiers (2 or 3) are used to convert activity data to emission quantities for significant pools and activities. This tiered approach that was adopted with the indicative guidance of the BAP is generally considered to ensure that carbon credits are compliance grade (Angelsen et al., 2009).

The previous chapter, analysing the early years of the negotiations, illustrated that Parties considered this to be a topic where much work lay ahead. However, they were generally of the opinion that the issue was surmountable given time and capacity development. The topic was considered in detail later in the negotiations with the intention to adopt more concrete guidance before countries constructed their RLs and implemented monitoring systems. When doing so, further submissions started pointing out difficulties with sticking to the BAP guidance. For example, Paraguay, on behalf of four other Central and South American, countries explained that

[t]he carbon stocks of different ecosystems around the world are poorly known and this aspect lags behind remote sensing. Carbon inventory methods and tools require high investment for broad-scale national inventories. When emissions from deforestation represent a key category, the IPCC guidelines for GHG national inventories recommends the use of Tier 2 or 3. Deforestation is almost always a key category for developing countries. Thus a great effort needs to be undertaken to allow countries to develop ecosystem specific equations and/or models rather than using default values. (UNFCCC, 2008g: 42)

This statement explains that carbon stock measurements were less developed than remote sensing techniques, and that the issue was centred on the development of allometric equations.

Chapter four detailed the laborious efforts required to develop such equations, including the necessity of far-reaching destructive harvest measures. It would therefore be very expensive and time consuming to develop the sufficient capacity to undertake rigorous measurements according to higher tiers. These issues were considered seriously by other Parties and several started opting for more lenient standards (UNFCCC, 2011e), which suggests that it would be difficult to form a network constellation supporting a decision according to IPCC guidance. Moreover, even if Parties supported such a decision, they would not be able to participate in REDD+ until their capacities were improved, which again would invite the issue of international leakage. This likely propelled the development of a compromise that has been a part of the technical discussions under the UNFCCC since the early days of the negotiations (e.g. UNFCCC, 2007b). It boils down to allowing countries to participate in REDD+ by using simpler methods and lower quality data, and then successively improve quality over time, a so-called step-wise approach (Herold et al., 2012).

The benefit of the step-wise approach is that it allows Parties to participate in REDD+ even though their capacities are not developed enough to apply higher tiers. Default values can be borrowed from international databases, thereby escaping the cumbersome effort to develop allometric equations needed to inscribe carbon quantities. This was appreciated by many

Parties, because submissions show an increased acceptance of the approach in later years of negotiations (UNFCCC, 2011e). However, of those who condoned the approach, most were clear that this should only be an option before entering possible market arrangements, the final phase of REDD+. For example, the EU wrote that tier 1 could be used in ‘earlier phases’, and the USA noted that ‘[f]or eventual market-based approaches, higher tier/ certainty estimates may be required’ (UNFCCC, 2011e: 58, 112). This ‘market exclusion’ of the step-wise approach can likely be interpreted as a way of stating that the large uncertainties associated with tier 1 approaches are not suitable in a system where carbon credits are used for offsetting purposes.

Non-humans, the carbon in forests, were articulated in different ways in these negotiations. They were articulated as tremendously difficult to measure, thereby supporting a constellation favouring the step-wise approach. However, they were also articulated as a factor that must be measured according to higher tiers in order to avoid large uncertainties in markets, which means that their emission behaviour was appropriated in support of a constellation seeking to prohibit the approach from entering into market arrangements. The negotiations resulted in a decision on the topic specifying that ‘*a step-wise approach ... may be useful, enabling Parties to improve the ... forest reference level by incorporating better data, improved methodologies and, where appropriate, additional pools*’ (UNFCCC, 2011b: 17). The decision adopted the step-wise approach and while it lacks precision as it does not specify tier levels, a Party respondent involved in the negotiations argued that ‘the step-wise approach could of course imply tier 1’ (Party Interview, 2013b).

The decision, moreover, refrains from stating when countries must have fully developed RLs based on higher tiers for significant activities and pools, implying that the door may be left open to continue improving data quality while participating in potential market-based

arrangements. This assumption was strengthened by submissions after the decision was taken, where some Parties indicated that tier 1 approaches should be allowed in a market-based setting (UNFCCC, 2012a). Thus, while the step-wise approach was adopted, the addition that this compromise should not be allowed in market settings was likely subjugated.

The implication is that Parties have strayed far from the aspiration to master carbon stocks and flows through the application of higher tiers according to IPCC guidance. Instead of constructing emission factors that correspond to local carbon values, external default values can be imported from international databases. In other words, *carbon emissions are not measured*. The ambition to undertake local carbon quantification was abandoned for an approach that only requires the quantification of trends in forest loss and regeneration. The construction of carbon credits still depends on exact quantities since commodities cannot be traded based on uncertainties. To create those exact quantities, a partial representation of forests is firstly applied that neglects those activities and pools considered non-significant. The next step is not to measure changes in carbon stocks, but to apply average values for different forest types that have been derived from exterior stakeholders with no involvement and thus accountability to the REDD+ project in question. Moreover, as argued in chapter four, those values are by many observers assumed to lead to measurement errors of +/- 50%. When those operations are completed, only one procedure must likely be undertaken before carbon credits are ready for potential market arrangements.⁵¹

The procedure in question is one that is argued to ensure the compliance grade of carbon credits constructed based on tier 1 methodologies. While phrased in a technical language, Norway expressed the procedure most clearly:

⁵¹ Both the RL and emission reductions are, however, subjected to assessments. On this, see: UNFCCC (2013c: 34-42), and on the politics of developing guidance for assessments, see: Dutschke (2013). Those assessments would, however, follow the guidance analysed in this and the previous chapter.

By using default values subtracted for the full confidence interval to discount for uncertainty, this would allow early access to results-based payments while also incentivizing continuous improvement over time. Norway does not see any reason why these cannot qualify, to enter compliance markets in the future, on equal terms with “fully MRVed” reductions, given that the appropriate discounts more than ensure full environmental integrity. (UNFCCC, 2012a: 56)

Norway argued that default values, i.e. tier 1, can be used in market-based arrangements, but only when ‘uncertainty is discounted’ and this is done by applying what is called the ‘conservativeness principle’.

The principle is important because it seeks to marketise carbon credits in a situation where Parties failed to monitor emission trends according to the strict recommendations of the IPCC. The idea of the principle is to incorporate the uncertainty of the different tiers and discount emission reductions based on the amount of uncertainty. It was helpfully explained by a non-state respondent supportive of the principle:

The principle of conservativeness requires that you report the most reliable minimum estimate, so that if you think about the carbon stock of a given patch of forest ... let’s say we know the current stock is 100 tonnes and we know that to within 10%, so we know that it’s between 90 and 110 ... We apply this conservativeness principle and we utilise this lower bound, this least reliable estimate as part of the calculations, so we directly incorporate the fact that there is uncertainty present in these estimates. (NGO Interview, 2013d)

In other words, the principle seeks to incorporate the uncertainty of the carbon measurement methods and discount carbon credits based on the level of uncertainty. If large uncertainties are understood to be present, many credits should be discounted. Conversely, if the measurements are undertaken with more rigorous methods, fewer credits should be discounted. In the above example, only 90 tonnes of carbon would be converted to carbon credits because of the present

uncertainties. This means that the principle is meant to both discount for uncertainty and work as an incentive to improve monitoring systems.

The principle is not adopted by the UNFCCC, likely because it pertains to finance and market-based arrangements, and negotiations on those topics are still ongoing as of 2015. Moreover, discussions are being conducted in academic journals on the suitability of the principle; it was first introduced by Grassi et al. (2008) for the context of REDD+, questioned by Plugge et al. (2013) and then defended by Grassi et al. (2013). While the applicability of the principle is debated, it is clear from several respondents and submissions that it had stronger support than the stricter criteria of the IPCC (UNFCCC, 2012a, NGO Interview, 2013d, Party Interview, 2013b). However, the principle also had its critics. The strongest critique came from a coalition of 13 NGOs, many of which are associated with the Ecosystem Climate Alliance. They argued that

[t]he proposal that ‘uncertainties can be dealt with through conservative accounting’ is called into question in light of the scale of uncertainties that arise in forest carbon accounting. The level of accuracy in measuring carbon stocks and fluxes from land based emissions falls short of the level of accuracy expected to confidently trade an asset in a global compliance market. (Rainforest Foundation UK et al., 2012: 6)

This ensemble of NGOs argued that the scale of uncertainties disables compliance grade carbon credits despite the application of the conservativeness principle. The argument here is that the process of rendering carbon tradable, which includes selective monitoring of certain activities and pools over time against a hypothetical reference level, and the application of standardised tier 1 values to local forests, can produce uncertain estimates even though efforts are made to reduce those issues through the discussed principle. This type of critique, however, was not advanced by many NGOs and while this silence can be interpreted as a support for the

principle, it is also possible that NGOs refrained to engage in technical matters since it could be difficult to ‘compete with the science of the discourse’ (Nielsen, 2013: 11), as indicated in the previous chapter.

The step-wise approach and the conservativeness principle were advanced because the indicative monitoring criteria of the BAP proved difficult to sustain. Parties thus advanced a pragmatic strategy that permitted less strict criteria where better data and increased certainty could be attained at a later point. While a network constellation sought to prohibit the approach from being used in a market setting, it was subjugated through the negotiations. Measuring carbon emissions is now based on an approach where default values provided by the IPCC are seemingly permissible instead of undertaking laborious efforts to attain suitable allometric equations. This will have the consequence that fewer carbon credits are produced given that uncertainties are to be discounted, but it may also work to incentivise Parties to strengthen their capacities to produce more credits. As stated above, however, it also suggests that carbon volumes are not measured in forests. Instead, they are estimated based on already available default values.

Therefore, Parties have strayed far from their ambition to master carbon stocks and flows. In addition to the replacement of the ‘carbon panopticon’ with a compartmentalisation of forests, they have also replaced carbon measurements within those compartments with estimations based on standardised values. The step-wise approach (and the conservativeness principle should it be acknowledged) both instruct and incentivise Parties to better their capacities. The faith in technological innovation and a future with more accurate measurements according to higher tiers is therefore retained. However, as the negotiations progressed Parties began to realise that the point in time when this would be possible lay further ahead than expected. The consequence of this realisation was not primarily further capacity building and

time dedicated to improving monitoring capacities before participating in REDD+. On the contrary, there was a push to allow countries to partake in carbon trading despite monitoring issues. Those wary of letting Parties participate based on lower standards were silenced and the conservativeness principle was advanced to provide the necessary market legitimacy in spite of lacking capacities. There was, in other words, a will to create markets and trade carbon credits that was stronger than the resistance offered by both humans and non-humans.

8.4 Conclusion

This chapter analysed how the monitoring criteria of the BAP was fleshed out through further negotiations. It analysed negotiations pertaining to forest degradation, carbon pools and what methods to apply when converting activity data to emission estimates. The outcomes together create guidelines that are the basis for establishing a monitoring system to measure and quantify carbon stocks and flows, which later may be turned into carbon credits and sold to Annex 1 countries. This chapter, therefore, also addressed the research question: *How is REDD+ carbon rendered tradable through the negotiations?* The analysis illustrated how Parties, for all three outcomes, strayed away from the indicative guidance of the BAP and decided upon more lenient monitoring criteria. The guidelines allow for the exclusion of non-significant emission activities and carbon pools, and are likely to permit the use of tier 1 methods in combination with the conservativeness principle when estimating emissions.

Actor-network theory was applied to understand all outcomes as supported by a network constellation comprising both humans and non-humans. It was suggested that non-humans were articulated as resisting inscription with available monitoring technologies and measurement techniques, and therefore supported network constellations favouring decisions less stringent

than the BAP. However, it was also detailed how non-humans were enrolled in constellations supporting strict decisions. This difference in articulation was a consequence of the aims of the constellations. Humans define the constellations and their strategic ends, and the agency of non-humans is dependent on how they are articulated within them by the participating humans.

A consequence of the outcomes is that Parties had to abandon their earlier ambition to monitor all carbon stocks and flows according to IPCC guidance. Instead, the outcomes produced guidelines in which a partial representation of forests is articulated where certain emission activities and carbon pools can be excluded, and where carbon quantities need not be directly measured. However, carbon trading necessitates exact quantities and the conservativeness principle was therefore advanced as a proposed strategy to reduce uncertainties and thereby maintain the momentum of establishing REDD+ as a market-based mechanism with confidence in the traded commodities. The principle was advanced within a step-wise approach that allows Parties to retain their faith in a future where more precise carbon quantification can be undertaken, and where the conservativeness principle can be replaced with local carbon measurements. The approach likely allows for the use of tier 1 methods in a market setting and while this was met with resistance throughout the negotiations, the aspiration to market carbon credits was stronger than this resistance.

Adhering to IPCC guidelines is often assumed to ensure the compliance grade of carbon credits (Angelsen et al., 2009), which denotes ‘monitoring sufficient to reassure investors’ (Lovell, 2014b: 6) that traded credits are based on rigorous measurements. Parties have relaxed the standards of the IPCC for all three agenda items analysed in this chapter, although this may not give carbon credits derived from REDD+ a non-compliance grade rating. While compliance grade denotes credits based on rigorous monitoring, it is defined as credits that can be used in a compliance market. The credits must be rigorous because they will be used by Parties

complying with their commitments to reduce emissions. The guidance analysed in this chapter constitutes the official guidance for a potential compliance market developed under the UNFCCC. Given that Parties developed this guidance, it is probable that they will be willing to purchase credits based on it, which in turn will incentivise investors to partake in the market, irrespective of the uncertainties articulated in this and the previous chapter.

Chapter 9

CONCLUSION: A GOVERNING STRATEGY EMERGING

This study set out to explore how avoiding forest loss is rendered governable through the UNFCCC negotiations and what such governing entails. This is warranted, it was argued, because research on REDD+ has mostly focused on how the scheme should be constructed to be effective. Governmentality theory was applied to undertake this exploration because it considers regimes of practices, which includes both the practice of governing and the ideas informing this practice. The study analysed the legitimating and coordinating rationality behind REDD+ governance, as well as how forests and forest users were represented as governable, and how this resulted in a range of concrete negotiation outcomes informing how the scheme will be governed.

The governmentality framework therefore addressed the question of how REDD+ is rendered governable through the UNFCCC negotiations. However, the study went beyond this problem formulation to also consider what this governance entails in terms of validating and subjugating certain governance approaches. It did so by incorporating discourse analysis and actor-network theory to analyse how REDD+ governs based on a validation and legitimation of certain problem framings, governance tools and methods, and target audiences (both human and non-human), while also continuously marginalising contesting problem framings, governance arrangements and target audiences.

The methodological framework to undertake this analysis was developed in chapter two wherein governmentality theory was detailed and subsequently operationalised through a combination of discourse analysis and ANT. Chapter three detailed the empirical data and split

up the analysis according to three focal points. The focal points were analysed through chapters five to eight and, together, they constitute an account of REDD+ was rendered governable through processes of validation and subjugation.

This concluding chapter summarises how the regime as a whole was articulated during the early years of the negotiations, and how it developed through processes of validation and subjugation. It will be argued that this process manifests a particular governing strategy. After providing this argument, the empirical and theoretical contributions of the thesis are highlighted. A final section discusses strengths and weaknesses of the methodological framework and avenues for further research.

9.1 The regime of practice and the emergence of a governing strategy

The first years of the negotiations illustrates that REDD+ was centred on the problem that forests are not valued as much standing as they are when cut down, which has the consequence that forest users have little incentive to conserve their forests. The proposed solution was to create a monetary value for standing forests that corresponds to the opportunity costs forest users incur by not cutting them down. Carbon markets were advanced to coordinate the disbursement of money in exchange for carbon credits that Annex 1 countries could use to cost-effectively comply with their commitments to reduce emissions. The scheme was legitimised by the idea that emissions will be reduced cost-effectively, while also contributing to both sustainable development and biodiversity conservation. This was the elegant rationality of REDD+ in the early years of the negotiations.

The regime of practice also includes those that are to be governed based on this rationality and the analysis elucidates how both international drivers and those contributing to export-led

growth were de-emphasised, whereas subsistence forest users were emphasised and considered cost-effective to address. A range of 'enabling conditions' were noted that had to be instituted before the drivers could be addressed through opportunity cost compensation, and those conditions correspond to the basic cornerstones of a market-based economy, such as a system of money and exchange, private property and the attainment of wages or profit. If these conditions are met, it was assumed that forest users would respond positively and conserve forests if compensated for incurred opportunity costs. Forest users were therefore articulated as subjects drawn from neo-classical economic theory that are utility-maximising and responsive to monetary incentives.

The regime depends on 'avoided deforestation' being amenable to carbon trading. In the early years, negotiators exhibited a great confidence that inscription devices could be deployed to quantify changes in carbon trends over time. If there were capacity gaps, negotiators were generally very confident that those would soon be closed in order to accurately quantify carbon stocks and flows, which could be converted to carbon credits and, in turn, payments according to incurred opportunity costs. Governance guidelines for this regime were developed in a thoroughly optimistic spirit in the sense that most Parties and many non-state actors were confident that REDD+ would lead to cost-effective emission reductions and co-benefits; that forest users would be readily interested in the scheme should monetary incentives and suitable market conditions be in place; and that carbon could presently, or in the near future, be quantified. A few states and NGOs were less optimistic and they articulated issues within implementing states regarding tenure rights, gender, traditional knowledge and biodiversity, and were concerned over the ability of inscription devices to accurately monitor changes in carbon stocks over time.

The majority of submissions did, however, not articulate such issues and concerns. Their fields of visibility were closely aligned to the theoretical postulates of the rationality. This rationality assumes that co-benefits will materialise and that emissions will be reduced if monetary incentives are made available; this follows if actors behave rationally, and if there are no power asymmetries and market imperfections obstructing such postulates. The submissions did not stray far from this abstract and rational field of visibility, and when they considered the capabilities to monitor carbon stocks and flows, they were closely aligned to the discourse of ecological modernisation with its strong faith in technological innovation to solve any outstanding monitoring issues. REDD+ progressed smoothly during the first years of the negotiations due to the subjugation of those types of issues that strayed from the confines of the rationality.

REDD+ was on such grounds adopted as part of the BAP, which meant that it was negotiated for potential inclusion in a climate agreement to be reached in Copenhagen in 2009. This also had the consequence that REDD+ became increasingly challenged over the whole regime of practice: vocal NGOs and Parties demanded safeguards to protect biodiversity, and the rights and knowledge of forest users; the use of markets and offsets was contested; the sole monetary valuation of carbon was challenged by the introduction of non-carbon benefits; the marginalisation of international drivers and articulation of subsistence forest users as central drivers were contested; and non-humans resisted inscription, in part due to an overestimation of the pace of technological innovation. The challenges resulted in a range of concrete negotiation outcomes, and those outcomes manifest a governing strategy that emerged through processes of validation and subjugation. The function of the strategy is to validate governance according to the rationality of REDD+ described above and to subjugate deviations. It is

strategy that, at once, perpetuates the rationality and polices its borders so as not to jeopardise current growth-oriented patterns of production and consumption outside of it.

The analysis of the rationality explained that a non-market mechanism has been agreed by the SBSTA, and this is the only deviation from the strategy because it disrupts the reliance on markets that are a constituent part of the rationality. However, it was also stressed that the future of this mechanism depends on continued funding and should this not materialise then the market option would dominate (along with bilateral offsetting agreements). Offsetting is, as argued, integral to the rationality. It is assumed to lead to cost-effective emission reductions for Annex 1 countries – which has the consequence that their efforts to mitigate climate change have the smallest impact possible on their economies – and a range of economic, ecological and social benefits for non-Annex 1 countries.

Safeguards have been instituted to promote and support biodiversity protection, and the rights and knowledge of forest users. However, they rest on a weak legal foundation and are based on the subjugation of stronger rights. It was only ‘noted’ that the UNDRIP was adopted by the UN General Assembly, a declaration that could empower forest users to reject REDD+ projects had it been affirmed by the UNFCCC and its Parties. States can of course choose to uphold any potential domestic legislation that would allow forest users to determine whether or not to have REDD+ on their lands, but the safeguards do not include such rights. On the contrary, they place REDD+ projects in a position of superiority over forest users and therefore constitute a marginalisation of those forces that may stand in the way of REDD+. In other words, the safeguards work to perpetuate the rationality and facilitate its penetration into tropical forests.

The non-carbon benefits negotiations also concluded with a placement of carbon in a position of superiority. NCBs were relegated to a voluntary position while carbon remained the

coin of the realm and valued in monetary terms. A decision placing NCBs on an equal footing with carbon would have turned REDD+ into a more holistic PES approach, incentivising an assortment of ecosystem services and, potentially, forest governance reforms. Such services are, however, not directly useful for the purpose of generating cost-effective emission reductions, and if they are believed to follow automatically from carbon sequestration and trading, then the concept is redundant. The decision thus affirms the rationality of the early years of the negotiations where cost-effective offsetting was central and co-benefits would result as a consequence, and it subjugates the attempt to broaden its remit. Consequently, while the safeguards negotiations assured the outreach of the rationality, the NCB negotiations policed its constitution to remain focused on carbon sequestration.

The decision on drivers validated the governance of domestic drivers and marginalised international drivers. The cost-efficiency logic of targeting the cheapest drivers may also work to detract attention from domestic drivers implicated in the export-led growth strategies of non-Annex 1 countries. Moreover, the livelihoods of forest users were the only driver directly mentioned in the adopted decision. In other words, the perceived ‘low-hanging fruits’ of local forest users will likely be targeted while those drivers associated with international economic relations will be omitted. The intimate governance of forest users was highlighted from a perspective attentive to the moulding of subjects’ conduct, but it was mandated for the two reasons of increasing conservation effectiveness and making carbon monitoring more cost-effective. The drivers negotiations and the governance of forest users thus affirm the search for cost-effective solutions to reduce emissions, but they also police the borders of the rationality because local forest users will likely be governed while the consumption patterns of Annex 1 countries and the production patterns of non-Annex 1 countries will remain ungoverned. The

border is thus policed by placing local forest users on the inside and growth-oriented economic relations on the outside.

Finally, the two chapters drawing on ANT illustrated the severe monitoring issues that compromised Parties' aspiration to master carbon stocks and flows. Those negotiations were a struggle to produce guidelines that could be the basis for rendering carbon tradable in the face of cost and monitoring issues. However, rather than prohibiting carbon trading or setting aside further time for capacity building to facilitate trading according to IPCC methodologies that are thought to ensure the compliance grade of carbon credits, a range of innovative compromises were introduced. The compromises likely permit the use of tier 1 methods in combination with the conservativeness principle, which means that carbon stocks are not measured. This is indicative of a very strong drive to render carbon tradable irrespective of monitoring and data quality issues, and carbon trading is, as argued, a constituent part of the rationality. The technical negotiations thus also perpetuated the rationality. They subjugated the complaints of those wary of offsetting due to monitoring issues, and they produced a range of compromises for the purpose of facilitating carbon trading and cost-effective emission reductions.

Many of the decisions validated the elegant rationality of REDD+ despite contestation and challenges across all agenda items being negotiated. They also subjugated most decision proposals that sought to detract from this rationality by prohibiting carbon trading, making REDD+ conditional on the approval of forest users, paying for non-carbon benefits, or by addressing consumption patterns within Annex 1 countries. In doing so the decisions perpetuated the rationality and facilitated its penetration into tropical forests. They also policed its constitution to remain focused on carbon sequestration and the creation of cost-effective offsets. They finally policed its borders to ensure that present growth-oriented economic relations, and the patterns of production and consumption sustaining those relations, remain

ungoverned. The decisions therefore manifest a governing strategy with a certain coherence, and this strategy is aimed at perpetuating both the rationality of the early years of the negotiations and the patterns of production and consumption outside of it.

9.2 Contribution

When this research project commenced, the literature on REDD+ that asked similar questions to this project was very thin. It was centred around the article by Thompson et al. (2011) that considered how REDD+ governs through processes of validation and subjugation, but without focusing on the negotiations. During the course of the project, however, discourse analyses emerged of the negotiations, and the articles by den Besten et al. (2013) and Nielsen (2013) are particularly rigorous. Moreover, Gupta et al. (2012), Lovell (2014a, b) and Lovell and MacKenzie (2014) have published articles on what rendering carbon tradable entails in more local settings from ANT or closely related perspectives. Finally, Stephan's (2013) thesis includes five texts on REDD+ drawing on discourse analysis, market sociology, governmentality and hegemony theory, and they are in part focused on the negotiations.

This research project was in light of these publications navigated in a direction where both rigorous empirical and theoretical contributions would be possible. With regards to the former, this thesis complements and extends Stephan's work that first analysed REDD+ as a regime of practice. It extends Stephan's work because it includes the first in-depth analysis of how the regime developed throughout the negotiations, crossing both traditionally 'political' and 'technical' negotiation topics. A chronological discourse analysis of the negotiations has been undertaken by den Besten et al. (2013), but they were not as closely attentive to policy development as this thesis was, and no publication has focused in detail on the more technical

aspects analysed here. This thesis therefore contributes with a novel analysis of the regime of practice of REDD+, including how it developed over time through a point-by-point policy development perspective attentive to processes of validation and subjugation.

Stephan (2012) has also analysed how REDD+ carbon is rendered tradable. He did not, however, delve into the technical negotiations, as this study did, to explicate the contentious process of constructing the guidelines to monitor carbon stocks and flows, which is the basis of producing carbon credits. Cuckston (2014) has considered this to some extent, but this study is likely the first that has analysed this process in detail. It did so from an ANT perspective to understand how the contestation over carbon trading and offsets was not only a struggle of ideas, but rather one between negotiators, inscription devices and the forests themselves that affected what monitoring guidance was adopted. The analysis provides an impression of this struggle, which is an empirical contribution detailing where negotiators articulated monitoring issues and uncertainties, and how this affected the adopted monitoring criteria. It also provides an understanding of how REDD+ carbon credits are based on monitoring guidelines that deviate from IPCC guidance and in what ways they do so. Moreover, this analysis opens up avenues for further research based on other methodologies that can zoom in on the perceived uncertainties and study how they are approached in practice by Parties appropriating the guidelines to institute their monitoring systems.

The combined analysis of ‘political’ and ‘technical’ negotiation topics illustrates how REDD+ was rendered governable through a process of contestation that includes both humans and non-humans. This thesis is the first to analyse this combination in detail and the analytical outcomes were crystallised into the governing strategy described above. This contribution is broadly relevant as it gives an account of how REDD+ evolved over the years into its current form. However, it contributes more directly to post-structural research of climate governance

since it illustrates how discursive struggles and network constellations were consistently steered towards outcomes perpetuating the rationality of the early years of the negotiations. It may seem intuitive that REDD+ is a continuation of earlier forms of climate governance that govern within, rather than challenging, current production and consumption patterns. However, this thesis contributes with an empirical exploration of how this was undertaken in practice through processes of validation and subjugation.

This thesis also contributes to governmentality literature. Stephan et al. (2014: 59) have argued that ‘accounts of governmentality often neglect the heterogeneity and “messiness” of governmental regimes’. By focusing on *how* governing is practically undertaken, contesting ambitions in the development of governmental regimes are often not considered at length. This thesis, however, analysed heterogeneity and messiness in the development of a governmental regime, and therefore makes a contribution to governmentality literature. It analysed how governance is based on a particular rationality, and how it targets certain objects and subjects based on particular representations of those targets, which is common in governmentality research. However, it added an understanding of how this resulted from a process of struggle that subjugated other governing alternatives. It also added a governing strategy, manifested through processes of validation and subjugation, steering this struggle in a particular direction. In other words, this thesis accounts for the messiness Stephan and others called for, but also how this messiness can be steered to stay within particular discursive spaces and governance practices.

These contributions were made possible by another contribution, which is the integration of discourse analysis and ANT to operationalise a governmentality analysis. Several recent publications combine governmentality and ANT. For example, the edited volume by Strippel and Bulkeley (2014a) includes a range of contributions either applying governmentality in

combination with ANT, or arguing that governmentality may benefit from ANT, and Lovell (2014a) deployed both governmentality and ANT to understand how forest carbon is measured in REDD+. Aside from this thesis, however, the two traditions have in the context of climate governance not been integrated in a coherent methodological framework. The broad remit of governmentality, covering the different dimensions of a regime of practice, makes it particularly suited for the application of a variety of methodological tools. This thesis therefore appropriated both ANT and discourse analysis to operationalise a governmentality analysis. However, this integration of ANT and discourse analysis is fraught with tension due to the ethnographic orientation of ANT detailed in chapter two. To ameliorate this tension, ANT was applied when inscription devices were available, which allowed for the tracing of how negotiation outcomes were supported by network constellations. When such devices were not available, on the other hand, discourse analysis was applied to analyse the contestation of the rationality and its dominant representations.

This integration does not solve the epistemological tensions between ANT and discourse analysis. Latour (2005: 137) would still argue that appealing to discourse is like ‘taking a free ride’ at the expense of rigorous and rewarding descriptive research to study how objects are formed. The integration was therefore only within the analytical framework, which subsequently was operationalised in a design where discourse analysis was used to address two analytical focal points, and ANT to address a third. A ‘free ride’ was taken when analysing the rationality and drivers of forest loss, where a lack of data made it difficult to study how negotiation outcomes were formed through the agencies of both humans and non-humans. However, inscription devices were readily available for the technology dimension, which facilitated an impression of how non-humans, alongside Parties, were implicated in network constellations supporting negotiation outcomes. The contribution this thesis makes on the topic

is therefore the argument that ANT and discourse analyses can be used together within a governmentality analysis, and that the logic of separation between the two theoretical traditions should be related to the availability of inscription devices facilitating knowledge tracing and, therefore, within-network agency. This contribution is not only relevant for governmentality research of REDD+, but also other aspects of climate negotiations, and other regimes of practices as long as suitable empirical material is available. The next section also considers ANT, but in the context of limitations and avenues for future research.

9.2 Limitations and future research

The broad empirical scope of this thesis can be considered both a limitation and a strength. Combining ANT and discourse analysis facilitated an analysis of both technical and more conventionally political agenda items, and while this paved the way for the contributions noted in the above section, it also meant that the empirical scope was wide. A narrower focus would have resulted in a closer attention to the contestation around different agenda items or a more careful delimitation of network constellations supporting particular outcomes. The articulated issues with inscription devices for the different agenda items could have been more elaborately analysed, or alternatively, the agenda items analysed throughout the first two analytical chapters could have been narrowed down to elicit, in greater detail, the various types of challenges the rationality was subjected to. However, such an in-depth approach would have made it difficult to analyse the whole regime of practice of REDD+, which was the exploratory intention of this research project. Moreover, it would not have elucidated the governing strategy to the same extent. It would have resulted in fewer empirical cases to support the coherent picture of how challenges across the regime were consistently subjugated according to the strategy.

The very narrow use of ANT must also be restated in this section. ANT is an ethnographic approach advocating for a study of how objects are formed through both humans and non-humans interactions. The objects under study have been negotiation outcomes, and a full-scale ANT study would ideally have investigated inscription devices in practice; the data outputs of those inscription devices; humans making quality judgements based on those outputs; and articulations of quality issues in negotiation submissions based on those judgements. This study was, however, solely based on statements within submissions, and this had the consequence that the analysis was reliant on how negotiators perceived the ability of inscription devices to monitor forests, and not my understanding of those abilities. The capabilities of inscription devices were thus filtered through the subjective opinion of negotiators, and those negotiators may have had a range of unknown motives for arguing the way they did.

This difference between a full-scale ANT study and how it was used here has consequences for the outputs. The former provides the reader with an appreciation of *how* knowledge of non-humans is translated between actors and come to play in different strategies. By attending to the different stages of translation the reader can, for example, form an opinion of whether or not actors are taking liberties with the knowledge they are handling. This study, on the other hand, could only describe how Parties used the knowledge in different strategies, for example to highlight uncertainties or the lack thereof. The reader is therefore not provided a viewpoint from which to evaluate the strategies.

There are, however, two arguments to state in defence of this approach. First, the ambition of this study was not to provide a full-scale tracing, or to ascertain the ‘true’ ability of inscription devices to monitor forests. Instead, it was to factor in negotiators’ perceptions of this ability and to analyse it as another form of contestation. This thesis is a study of contestation, validation and subjugation when rendering REDD+ governable, and not a study of the actual abilities of

inscription devices to undertake monitoring. Perceived, as opposed to objective, uncertainties were articulated as a form of contestation causing problems for negotiators, and an impression was given of how Parties solved those issues through a range of compromises. The purpose of this was to open up the 'black box' of those monitoring guidelines and illustrate how negotiators themselves articulated uncertainties, made compromises and deviated from IPCC methodologies in order to arrive at agreed outcomes.

This is relevant because it is possible that the guidelines will define compliance grade, which may have the consequence that market participants assume that carbon credits are always based on rigorous measurements simply because the guidelines are diligently followed. Academic attention to the articulation of uncertainties can, in this regard, work to keep the discussion open as to whether or not the guidelines should define compliance grade. As previously argued, it is also relevant because it can open up avenues for further research attending to how the perceived uncertainties are dealt with in practice. The second argument, which is shorter, is that a full-scale ANT study would also be vulnerable to perceptions, although mainly to the perception of the researcher doing the tracing.

The perception of the researcher is also relevant to consider for the analysis in general. Chapter three detailed in what ways reflexivity was exercised throughout the analysis, but this was not to reach more objective research outputs. Rather, it was to be transparent and open about the research process and how the analytical outcomes were arrived at. Those outcomes, including the above governing strategy, are thus a reflection of my positionality and should be understood as a basis for further research rather than taken as generalised facts of the negotiation process. It is pertinent to further analyse the REDD+ negotiations to corroborate these outcomes, but it is equally important to extend the analytical focus from the negotiations to the implementation of REDD+ projects. This is already underway, but further research is

necessary to ascertain what space is being given for non-market and non-offset approaches within REDD+ during implementation; how drivers and safeguards are addressed in light of the negotiation outcomes; and how carbon is rendered tradable as per the suggestion in the above paragraph. In other words, research should move from considering how REDD+ is rendered governable to how REDD+ governs. Another important avenue for further research is to analyse whether other topics of the climate negotiations also manifest comparable governing strategies to the one illustrated here. The following section suggests that a similar strategy has been followed by negotiators when adopting the Paris Agreement in late 2015. The section, which is a postscript written after the agreement was adopted, concludes the thesis.

9.3 Postscript, February 2016

The Paris Agreement was adopted in December 2015 with great fanfare. It includes the ambitious goals to ‘hol[d] the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursu[e] efforts to limit the temperature increase to 1.5 °C above pre-industrial levels’ (UNFCCC, 2015a: 2). To achieve this, Parties are obliged to ‘pursue domestic mitigation measures’, which means that all Parties must decrease emissions within their countries (UNFCCC, 2015a: 22). Such measures should be reported in ‘intended nationally determined contributions’ (INDC) and the measures shall be instituted ‘with the aim of achieving the objectives of such contributions’ (UNFCCC, 2015a: 22). This phrasing is less ambitious because it is only an aim, rather than obligation, to fulfil the objectives of the contributions, which is all the more serious given that the INDCs are weak. This weakness is acknowledged in the agreement, stating that ‘the estimated aggregate greenhouse gas emission levels in 2025 and 2030 resulting from the intended nationally determined contributions do not

fall within least-cost 2 °C scenarios' (UNFCCC, 2015a: 3). In other words, the Paris Agreement is based on ambitious goals, but Parties have not responded to this level of ambition, and they are moreover not obliged to follow through on their lower level of ambition. Ameliorating this is an instruction to submit new INDCs every five years and increase ambition over time. The agreement thus rests on a faith in a more ambitious future, which has been seen on several occasions in this thesis regarding both better monitoring capacities and increased financial commitments for adaptation and mitigation activities.

REDD+ is firmly included in the agreement under Article 5, stating that 'Parties are encouraged to take action to implement and support [REDD+]' and the joint mitigation and adaptation approach, while 'reaffirming the importance of incentivizing, as appropriate, non-carbon benefits associated with such approaches' (UNFCCC, 2015a: 23-24). All Parties are encouraged, but not obliged, to support REDD+ based on the guidance and decisions reviewed in this thesis, thus not altering any of the analysed outcomes. The agreement also includes three frameworks, one non-market and two allowing for carbon trading. The rules for those frameworks are yet to be agreed, but they are expected to enable Parties to both use REDD+ towards their own INDCs and market REDD+ credits for the benefit of those Parties that aspire to offset a part of their own domestic emissions. This thesis has analysed a range of political and technical issues with offsetting. Such issues have played a part in certain state and non-state actors' reluctance towards offsetting, but all those in favour have also continuously argued that rigorous domestic emission reductions must be secured to assure additionality when using credits to comply with commitments. INDCs are not strict commitments and their non-obligatory character raises questions to what extent the additionality criterion will be satisfied. Allowing carbon trading without the inclusion of strict additionality rules would not only invite the offsetting issues discussed in this thesis, it also risks replacing domestic reductions in fossil

fuel use with the conservation of tropical forests. While the latter is paramount, it should not be allowed to substitute the former as long as Parties are not on a safe trajectory to reaching the ambitious goals of the agreement through rigorous cuts in domestic emissions.

The agreement also converges with the governing strategy summarised in this concluding chapter. The voluntary character of the INDCs solidifies that the continued reliance on fossil-based raw material in the industry, energy and transportation sectors can remain largely ungoverned should Parties so desire. The agreement thus shields Parties, like the governing strategy did, against alterations to emissions-intensive patterns of production, transportation and consumption. It is still possible for Parties to fulfil, or even surpass, their INDCs through progressive legislation, innovation and education, but REDD+ and the broader agreement are crafted in a manner where rigorous financing, monitoring and mitigation measures are framed as future aspirations rather than present obligations. The implications of this strategy for REDD+ is that serious monitoring issues remain and that local forest users may be targeted while many other drivers responsible for forest loss – those implicated in emissions-intensive production and consumption activities – are shielded from the mechanism. Omitting such drivers entails that REDD+ will have a weaker impact on forest conservation and that local forest users will be tasked with creating offsets for richer countries. Moreover, the monitoring issues aggravate the offsetting issue discussed above; while offsetting is not suitable as a substitute for rigorous reductions in domestic emissions, it is also dangerous if it cannot be guaranteed that emissions are not leaking.

The implications of this strategy, so acquiescent to emissions-intensive production and consumption imperatives, are also visible in the overall agreement, because reluctance to address such structural issues is a root cause for submitting weak INDCs, forcing the agreement to include a statement indicating that the critical 2 °C scenario may not be viable. The current

framework for multilateral climate governance will not be effective until it is based on a governing strategy where such structural issues can be confronted and addressed. Such a strategy will require far-reaching changes to how climate issues are prioritised, and it will only be legitimate if it safeguards the aspiration of many countries to increase the living standards of their populations.

APPENDICES

Appendix 1: Participant Information Sheet

University of Birmingham, International Development Department PhD research on the development of REDD+ at the UNFCCC Participant Information Sheet

I invite you to take part in my PhD research study. Before you decide whether or not to take part, it is important that you understand why the research is being done and what it will involve.

Purpose of the study

My PhD research concerns the development of REDD+ at the UNFCCC. My broad goal is to make sense of what type of policy proposals, including those of a technical and political character, that together constitute REDD+. For example, monitoring carbon emissions from forests is difficult and this has resulted in technical negotiations regarding what parts of forests must be monitored in REDD+. It has also been discussed whether REDD+ should be broadened beyond its focus on carbon emissions to monitor and incentivise biodiversity and the clarification of tenure rights. Such discussions are of a more political character, but both are equally important for how REDD+ develops and how it will be implemented in practice.

I want to trace the development of REDD+ through such negotiations, with a particular focus on what policy proposals are agreed by the COP as well as what proposals are rejected. I think this is important in order to increase the understanding of the UNFCCC as a political forum and of REDD+ as a tool to mitigate climate change.

I am therefore contacting both representatives from nation states partaking in the negotiations, and organisations that have made formal submissions to the UNFCCC on the constitution of REDD+. I will ask respondents to elaborate on how they want REDD+ to be developed and how those ideas and policy proposals have been considered by the COP. This will increase my understanding of how REDD+ has developed based on a process where certain proposals are considered favourably while others are excluded. I also see this as an opportunity to increase my knowledge of the technical aspects of REDD+.

Why have you been invited to participate?

I am contacting you since your organisation have (in a coalition or on your own) submitted your views on REDD+ to either the SBSTA or the AWG-LCA under the UNFCCC, in the years 2011 or 2012. Alternatively, you are a representative from a nation state and your contact details have been specified in workshops related to REDD+ in 2011 or 2012. Your organisation or country have therefore advanced a range of views on REDD+ that have either been included or excluded through the negotiations and they are very important for my study.

Do you have to take part?

Not at all, though I would be very grateful if I could interview you or a colleague of yours working with this topic. Moreover, it would be very helpful if I could record the interview.

Confidentiality

I would prefer to use your organisation or country name in my research, but I can also ensure complete confidentiality if that is requested.

Questions I will ask

My primary interest is to know how your organisation or country prefer REDD+ to be developed, and how that converges or deviates from how REDD+ is currently being developed. I encourage you to talk about REDD+ in as much detail as possible – from general to technical aspects. I also provide a set of indicative questions that may or may not pertain directly to you. As such, they are optional talking points:

- *REDD+ was spearheaded by Nicholas Stern and other prominent economists arguing that REDD+ was a very cost-effective option to mitigate climate change. How did you consider such remarks when they first surfaced and how do you consider them now?*
- *Are you generally in favour of REDD+ or would you like to see funds and efforts directed towards another mechanism?*
- *What can we expect in terms of REDD+ implementation in the near future?*
- *How should verification of reduced emissions be undertaken?*
- *How advanced are the MRV capacities of countries implementing REDD+?*
- *Is the application of conservative measures and a step-wise approach suitable in face of lacking data?*
- *What is your view on safeguards?*
- *Are they suitable to ensure the interest of forest users when implementing REDD+?*
- *How will the institution of safeguards affect the implementation of REDD+ in terms of complexity, scale and pace?*
- *What is your view on co-benefits?*
- *How should they be incentivised?*
- *How would they alter the implementation of REDD+ in terms of complexity, scale and pace?*
- *How do you understand the concepts of reference level, (international) leakage, permanence, and drivers of deforestation?*
- *Do you have an opinion of how these concepts should be considered in REDD+?*
- *If so, how does this view relate to how they are considered in the negotiations?*
- *Should there be a consideration of national circumstances?*
- *May incentive bias be an issue when instituting these concepts?*

Appendix 2: Participant Consent Form

**University of Birmingham, International Development Department
PhD research on the development of REDD+ at the UNFCCC
Participant Consent Form**

I agree to take part in the above research. I have read the Participant Information Sheet, which is attached to this form. I understand what my role will be in this research and all my questions have been answered to my satisfaction.

I understand that I am free to withdraw from the research at any time, for any reason and without prejudice.

I have been informed that unless I have agreed to be identified in the outputs of this research, my data will be kept confidential.

I am free to ask any questions at any time before and during the study.

I have been provided with a copy of this form and the Participant Information Sheet.

Your signature will certify that you have decided to take part in this research study, having read and understood the information in the Participant Information Sheet.

Name of participant (print).....Signed.....Date.....

Name of researcher (print).....Signed.....Date.....

For clarity, please tick one of the below boxes:

I require complete confidentiality. ☐

I do not require confidentiality ☐

I want to decide on confidentiality after seeing the context that my citations will be put in. ☐

Statements can acquire a different significance when placed in a context with research issues and associated methodologies. If this box is ticked, draft chapters or draft articles will be disseminated to decide on confidentiality.

Please observe that it is possible that no names are used in the research even though you allow it. An example of such an occasion would be when the majority want to remain anonymous, in which case it would not be relevant to provide the names of just a few participants.

REFERENCES

- Accra Caucus (2008) 'Accra Caucus statement for COP 14'. Published online at <http://unfccc.int/3689.php>, [Accessed 14 March 2013].
- Agrawal, A. (2005) *Environmentality: technologies of government and the making of subjects*. Durham, NC: Duke University Press.
- Allan, J.I. and Dauvergne, P. (2013) 'The Global South in environmental negotiations: the politics of coalitions in REDD+', *Third World Quarterly*, 34 (8): 1307-1322.
- Angelsen, A., Boucher, D., Brown, S., et al. (2011) 'Modalities for REDD+ reference levels: technical and procedural issues'. Meridian Institute.
- Angelsen, A., Brown, S., Loisel, C., et al. (2009) 'Reducing emissions from deforestation and forest degradation (REDD): an options assessment report'. Meridian Institute.
- Aukland, L., Costa, P.M. and Brown, S. (2003) 'A conceptual framework and its application for addressing leakage: the case of avoided deforestation', *Climate Policy*, 3 (2): 123-136.
- Bäckstrand, K. and Lövbrand, E. (2006) 'Planting trees to mitigate climate change: contested discourses of ecological modernization, green governmentality and civic environmentalism', *Global Environmental Politics*, 6 (1): 50-75.
- Balint, P.J. and Mashinya, J. (2006) 'The decline of a model community-based conservation project: governance, capacity, and devolution in Mahenye, Zimbabwe', *Geoforum*, 37: 805-815.
- Betsill, M.M. and Corell, E. (2001) 'NGO influence in international environmental negotiations: a framework for analysis', *Global Environmental Politics*, 1 (4): 65-85.
- Boyd, W. (2010) 'Ways of seeing in environmental law: how deforestation became an object of climate governance', *Ecological Law Quarterly*, 37: 843-916.
- Brown, M.I. (2013) *Redeeming REDD: policies, incentives and social feasibility for avoided deforestation*. Oxon: Routledge.
- Brown, S. (2002) 'Measuring carbon in forests: current status and future challenges', *Environmental Pollution*, 116 (3): 363-372.
- Brown, S., Masera, O. and Sathaye, J. (2000) Project-based activities. In Watson, R.T., Noble, I.R., Bolin, B., Ravindranath, N.H., Verardo, D.J. and Dokken, D.J. (Eds.) *Land use, land-use change and forestry: a special report of the IPCC 308-14*. Cambridge, Cambridge University Press.
- Bulkeley, H. and Newell, P. (2010) *Governing climate change*. Abingdon, UK: Routledge.

- Cabello, J., Conant, J., Gilbertson, T., et al. (2011) *No REDD papers volume one*. Portland, Oregon, USA: Charles Overbeck/Eberhardt Press.
- Çalışkan, K. and Callon, M. (2010) 'Economization, part 2: a research programme for the study of markets', *Economy and Society*, 39 (1): 1-32.
- Callon, M. (1986) Some elements of a sociology of translation: domestication of the scallops and the fishermen of St Brieuc Bay. In Law, J. (Ed.) *Power, action and belief: a new sociology of knowledge?* London, Routledge & Kegan Paul.
- Callon, M. (2009) 'Civilizing markets: carbon trading between in vitro and in vivo experiments', *Accounting, Organization and Society*, 34: 535-548.
- Cammack, P. (2014) 'The world development report 2015: programming the poor'. *The multilateral development banks and the global financial crisis*. City University of Hong Kong, Southeast Asia Research Centre.
- Castree, N. (2002) 'False antithesis? Marxism, nature and actor-networks', *Antipode*, 34 (1): 111-146.
- Chagas, T., Costenbader, J., Streck, C., et al. (2013) 'Reference levels: concepts, functions, and application in REDD+ and forest carbon standards'. Amsterdam, CLIMATEFOCUS.
- Clarke, S. (1991) *Marx, marginalism and modern sociology: from Adam Smith to Max Weber*. London: Palgrave Macmillan.
- Clean Development Mechanism (CDM) Executive Board (2012) 'Clean cook stoves in Sub-Saharan Africa by ClimateCare Limited'. UNFCCC.
- Climate Action Network International (CAN) (2007) 'Reducing emissions from deforestation in developing countries: approaches to stimulate action'. Published online at <http://unfccc.int/3689.php>, [Accessed 14 March 2013].
- Climate Action Network International (CAN) (2012) 'CAN-International submission on how to address drivers of deforestation and forest degradation'. Published online at <http://unfccc.int/3689.php>, [Accessed 14 March 2013].
- Conservation International (2007) 'Untitled submission to the UNFCCC'. Published online at <http://unfccc.int/3689.php>, [Accessed 14 March 2013].
- Cooke, B. and Kothari, U. (2001) *Participation: the new tyranny?* London: Zed Books.
- Coordinadora de las Organizaciones Indígenas de la Cuenca Amazonica (COICA) (2009) 'SBSTA Submission de la Coordinadora de las Organizaciones Indígenas de la Cuenca Amazonica - COICA'. Published online at <http://unfccc.int/3689.php>, [Accessed 14 March 2013].
- Cox, R.W. (1983) 'Gramsci, hegemony and international relations: an essay in method', *Millenium: Journal of International Studies*, 12 (2): 162-175.

- Cuckston, T. (2014) *Financial accounting calculation in relation to nature*. PhD, Newcastle University.
- Dean, M. (1999) *Governmentality: power and rule in modern society*. London: Sage.
- Death, C. (2010) 'Counter-conducts: a Foucauldian analytics of protest', *Social Movement Studies*, 9 (3): 235-251.
- Death, C. (2011) 'Summit theatre: exemplary governmentality and environmental diplomacy in Johannesburg and Copenhagen', *Environmental Politics*, 20 (1): 1-19.
- Death, C. (2014) The limits of climate governmentality. In Strippel, J. and Bulkeley, H. (Eds.) *Governing the climate: new approaches to rationality, power and politics* New York, Cambridge University Press 77-91.
- den Besten, J.W., Arts, B. and Verkooijen, P. (2013) 'The evolution of REDD+: an analysis of discursive-institutional dynamics', *Environmental Science & Policy*, 35: 40-48.
- Department of Environmental Affairs (DEA) South Africa (2013) 'Joint statement issued at the conclusion of the 16th BASIC Ministerial meeting on climate change' [online]. http://www.environment.gov.za/mediarelease/16thbasic_ministerialmeeting_climatechange [Accessed 4 April 2015]
- Descheneau, P. and Paterson, M. (2011) 'Between desire and routine: assembling environment and finance in carbon markets', *Antipode*, 43 (3): 662-681.
- Di Gregorio, M., Brockhaus, M., Cronin, T., et al. (2013) 'Equity and REDD+ in the media: a comparative analysis of policy discourses', *Ecology and Society*, 18 (2): 39.
- Doty, R.L. (1993) 'Foreign policy as social construction: a post-positivist analysis of U.S. counterinsurgency policy in the Philippines', *International Studies Quarterly*, 37 (3): 297-320.
- Doty, R.L. (1996) *Imperial encounters: the politics of representation in North-South relations*. Minnesota: University Of Minnesota Press.
- Dutschke, M. (2013) 'Key issues in REDD+ verification'. Bogor, CIFOR.
- Ebeling, J. and Vallejo, Á. (2011) AR guidance: technical project design. In Ebeling, J. and Olander, J. (Eds.) *Building forest carbon projects*. Washington, Forest Trends.
- Ebeling, J. and Yasue, M. (2008) 'Generating carbon finance through avoided deforestation and its potential to create climatic, conservation and human development benefits', *Philosophical Transactions of the Royal Society B*, 363: 1917-1924.
- Ecosystem Climate Alliance (ECA) (2009a) 'Position on negotiating text for REDD'. Published online at <http://unfccc.int/3689.php>, [Accessed 13 March 2013].

- Ecosystem Climate Alliance (ECA) (2009b) 'Response to calls for submissions on the UNFCCC processes'. Published online at <http://unfccc.int/3689.php>, [Accessed 13 March 2013].
- Ecosystem Climate Alliance (ECA) (2011a) 'Guidance for modalities relating to forest reference levels and forest reference emissions levels'. Published online at <http://unfccc.int/3689.php>, [Accessed 13 March 2013].
- Ecosystem Climate Alliance (ECA) (2011b) 'Methodological guidance and modalities for measuring, reporting and verifying ("MRV") of REDD+'. Published online at <http://unfccc.int/3689.php>, [Accessed 13 March 2013].
- Ecosystem Climate Alliance (ECA) (2011c) 'REDD+ methodological guidance for activities relating to the drivers of deforestation and degradation and relevant issues'. Published online at <http://unfccc.int/3689.php>, [Accessed 13 March 2013].
- Eliasch, J. (2008) *Climate change: financing global forests – the Eliasch review*. London: Earthscan.
- Environmental Defence (ED) (2006) 'Reducing emissions from deforestation in developing countries: approaches to stimulate action'. Published online at <http://unfccc.int/3689.php>, [Accessed 13 March 2013].
- Environmental Defence (ED) and Amazon Institute for Environmental Research (IPAM) (2007) 'Reducing emissions from deforestation in developing countries: policy approaches to stimulate action'. Published online at <http://unfccc.int/3689.php>, [Accessed 13 March 2013].
- Fearnside, P.M. (2001) 'Saving tropical forests as a global warming countermeasure: an issue that divides the environmental movement', *Ecological Economics*, 39 (2): 167–184.
- Feindt, P.H. and Oels, A. (2005) 'Does discourse matter? discourse analysis in environmental policy making', *Journal of Environmental Policy & Planning*, 7 (3): 161–173.
- Fern, Friends of the Earth International and Rainforest Foundation UK (2008) 'Submission to the UNFCCC Secretariat in response to requests for ideas and proposals on the elements contained in paragraph 1 of the Bali Action Plan'. Published online at <http://unfccc.int/3689.php>, [Accessed 30 July 2013].
- Fletcher, R. (2010) 'Neoliberal environmentalism: towards a poststructuralist political ecology of the conservation debate', *Conservation and Society*, 8 (3): 171–181.
- Ford, L. (2003) 'Challenging global governance: social movement agency and global civil society', *Global Environmental Politics*, 3 (2): 120–134.
- Forest Peoples Programme (FPP) (2009) 'Views on issues relating to indigenous peoples and local communities for the development and application of methodologies '. Published online at <http://unfccc.int/3689.php>, [Accessed 13 March 2013].
- Foucault, M. (1977) *Discipline and punish: the birth of the prison* New York: Vintage books.

- Foucault, M. (1980) Truth and power. In Gordon, C. (Ed.) *Power/knowledge: selected interviews and other writings 1972-1977*. Brighton, Harvester Press.
- Foucault, M. (1983) On the genealogy of ethics: an overview of work in progress. In Dreyfus, H.L. and Rabinow, P. (Eds.) *Michel Foucault: beyond structuralism and hermeneutics*. 2 ed. Chicago, University of Massachusetts Press.
- Foucault, M. (1988) An aesthetics of existence. In Kritzman, L. (Ed.) *Michel Foucault – politics, philosophy, culture: interviews and other writings 1977-1984*. London/New York Routledge.
- Foucault, M. (1991a) Governmentality. In Burchell, G., Gordon, C. and Miller, P. (Eds.) *The Foucault effect: studies in governmentality*. Chicago, The University of Chicago Press.
- Foucault, M. (1991b) Questions of method. In Burchell, G., Gordon, C. and Miller, P. (Eds.) *The Foucault effect: studies in governmentality*. The University of Chicago Press, Chicago.
- Foucault, M. (2007) *Security, territory, population: lectures at the College de France 1977–1978*. Trans. G. Burchell. Basingstoke: Palgrave Macmillan.
- Foucault, M. (2008) *The birth of biopolitics: lectures at the College de France 1978–1979*. Trans. G. Burchell. New York: Palgrave Macmillan.
- Friends of the Earth International (2006) 'Friends of the Earth international submission addressing approaches to reduce emissions from deforestation March 2006'. Published online at <http://unfccc.int/3689.php>, [Accessed 13 March 2013].
- Friman, M. (2013) *Historical responsibility: assessing the past in international climate negotiations*. PhD Thesis, University of Linköping.
- Fundación Amigos de la Naturaleza (FAN Bolivia) (2006) 'Submission by Fundación Amigos de la Naturaleza (FAN Bolivia) on reducing emission from deforestation in developing countries: approaches to stimulate action'. Published online at <http://unfccc.int/3689.php>, [Accessed 13 March 2013].
- Gallon, K.F. and Busch, J. (2014) 'What drives deforestation and what stops it? A meta-analysis of spatially explicit econometric studies'. *CGD Working Paper 378*. Washington, DC, Center for Global Development.
- Global Forest Coalition (GFC) (2007) 'Potential policy approaches and positive incentives to reduce emissions from deforestation in developing countries'. Published online at <http://unfccc.int/3689.php>, [Accessed 13 March 2013].
- Global Forest Coalition (GFC) (2011) 'Submission by the Global Forest Coalition on the establishment of one or more market-based mechanisms to enhance the cost-effectiveness of, and to promote, mitigation actions'. Published online at <http://unfccc.int/3689.php>, [Accessed 13 March 2013].

- Global Forest Coalition (GFC) (2012) 'Drivers of deforestation and forest degradation'. Published online at <http://unfccc.int/3689.php>, [Accessed 13 March 2013].
- Global Observation for Forest Cover and Land Dynamics (GOFC-GOLD) (2008) 'Reducing greenhouse gas emissions from deforestation and degradation in developing countries: a sourcebook of methods and procedures for monitoring, measuring and reporting'. GOFC-GOLD Report version COP14-1 ed., GOFC-GOLD Land Cover Project Office, Wageningen University, The Netherlands.
- Global Observation for Forest Cover and Land Dynamics (GOFC-GOLD) (2014) 'A sourcebook of methods and procedures for monitoring and reporting anthropogenic greenhouse gas emissions and removals associated with deforestation, gains and losses of carbon stocks in forests remaining forests, and forestation'. GOFC-GOLD Report version COP20-1 ed. GOFC-GOLD Land Cover Project Office, Wageningen University, The Netherlands.
- Global Witness (2008) 'Ideas and proposals on paragraph 1 of the Bali Action Plan'. Published online at <http://unfccc.int/3689.php>, [Accessed 13 March 2013].
- Gordon, C. (1991) Governmental rationality: an introduction. In Burchell, G., Gordon, C. and Miller, P. (Eds.) *The Foucault Effect: Studies in Governmentality*. Chicago, The University of Chicago Press.
- Grassi, G., Federici, S. and Achard, F. (2013) 'Implementing conservativeness in REDD+ is realistic and useful to address the most uncertain estimates', *Climatic Change*, (doi:10.1007/s10584-013-0780-x).
- Grassi, G., Monni, S., Federici, S., et al. (2008) 'Applying the conservativeness principle to REDD to deal with the uncertainties of the estimates', *Environmental Research Letters*, 3 (doi:10.1088/1748-9326/3/3/035005).
- Green Climate Fund (2015) 'Background' [online]. <http://www.gcfund.org/about/the-fund.html> [Accessed 6 May 2015]
- Greenpeace (2009) 'Submission from Greenpeace International on the fulfillment of the Bali Action Plan'. Published online at <http://unfccc.int/3689.php>, [Accessed 13 March 2013].
- Griscom, B., Shoch, D., Stanley, B., et al. (2009) 'Sensitivity of amounts and distribution of tropical forest carbon credits depending on baseline rules', *Environmental Science & Policy*, 12: 897-911.
- Gupta, A., Lövbrand, E., Turnhout, E., et al. (2012) 'In pursuit of carbon accountability: the politics of REDD+ measuring, reporting and verification systems', *Current Opinion in Environmental Sustainability*, 4 (6): 726-731.
- Haas, P. (1992) 'Introduction: epistemic communities and international policy coordination', *International Organization*, 46 (1): 1-35.

- Hajer, M. (1996) Ecological modernization as cultural politics. In Lash, S., Szerszynski, B. and Wynne, B. (Eds.) *Risk, environment & modernity: towards a new ecology*. London, Sage.
- Hamrick, K. and Goldstein, A. (2015) 'Ahead of the curve: state of the forest carbon markets 2012'. In Peters-Stanley, M. and Gonzalez, G. (Eds.) Washington, Ecosystem Marketplace: A Forest Trends Initiative.
- Hansen, L. (2006) *Security as practice: discourse analysis and the Bosnian war*. London: Routledge.
- Hein, J., Meijer, K. and Rodríguez de Francisco, J.C. (2015) 'What is the potential for a climate, forest and community friendly REDD+ in Paris?'. Bonn, German Development Institute.
- Henry, M. (2010) *Carbon stocks and dynamics in Sub Saharan Africa* PhD, Paris Institute of Technology for Life, Food and Environmental Sciences & The University of Tuscia.
- Herold, M., Angelsen, A., Verchot, L.V., et al. (2012) A stepwise framework for developing REDD+ reference levels. In Angelsen, A., Brockhaus, M., Sunderlin, W.D. and Verchot, L.V. (Eds.) *Analysing REDD+ challenges and choices*. Bogor, CIFOR.
- Herold, M., Román-Cuesta, R.M., Mollicone, D., et al. (2011) 'Options for monitoring and estimating historical carbon emissions from forest degradation in the context of REDD+', *Carbon Balance and Management*, 6: 13.
- Hiraldo, R. and Tanner, T. (2011) 'Forest voices: competing narratives over REDD+', *IDS Bulletin Volume*, 42 (3): 42-51.
- Holmgren, S. (2013) 'REDD+ in the making: orders of knowledge in the climate–deforestation nexus', *Environmental Science & Policy*, 33: 369-377.
- Holzinger, B. and Kütting, G. (2012) Global governance and environmental politics. In Amenta, E., Nash, K. and Scott, A. (Eds.) *Political Sociology*. West Sussex, UK, Wiley-Blackwell 421-430.
- Horner, K., Amerasinghe, N. and Bock, S. (2013) 'REDD: addressing the drivers – a case for the WTO?'. Published online at http://www.ciel.org/Publications/REDD_WTO_4Jun2013.pdf, [Accessed 13 January 2015].
- Huettner, M., Leemans, R., Kok, K., et al. (2009) 'A comparison of baseline methodologies for 'reducing emissions from deforestation and degradation'', *Carbon Balance and Management*, 4 (1): 4.
- Hufty, M. and Haakenstad, A. (2011) 'Reduced emissions for deforestation and degradation: a critical review', *Consilience: The Journal of Sustainable Development*, 5 (1): 1-24.

- Igoe, J. (2004) *Conservation and globalization: a study of national parks and indigenous communities from East Africa to South Dakota*. Belmont, California: Wadsworth Publishing.
- Institute for Environmental Security (IES) (2007) 'Reducing emissions from deforestation in developing countries'. Published online at <http://unfccc.int/3689.php>, [Accessed 13 January 2015].
- International Centre for Research in Agroforestry (ICRAF) (2007) 'Issues relating to reducing emissions from deforestation in developing countries '. Published online at <http://unfccc.int/3689.php>, [Accessed 30 July 2015].
- International Indigenous Peoples Forum on Climate Change (IIPFCC) (2009) 'Submission to SBSTA on item 11 of FCCC/SBSTA/2008/L.23 '. Published online at <http://unfccc.int/3689.php>, [Accessed 13 January 2015].
- International Institute for Geo-information Science and Earth Observation (2009) 'Forest biomass assessment in support of REDD by indigenous people and local communities '. Published online at <http://unfccc.int/3689.php>, [Accessed 13 January 2015].
- International Union for Conservation of Nature (IUCN) (2012) 'Wanted: the pro poor REDD+ principles' [online]. <http://portals.iucn.org/2012forum/?q=node/2688&q=node/2688> [Accessed 26 February 2014]
- International Work Group for Indigenous Affairs (IWGIA), Asia Indigenous Peoples Pact (AIPP), Forests of the World, et al. (2014) 'Submission on non-carbon benefits as an imperative for the sustainability of REDD+'. Published online at http://unfccc.int/parties_observers/submissions_from_observers/items/7478.php, [Accessed 13 January 2015].
- IPCC (2003) *Good practice guidance for land use, land-use change and forestry*. Kanagawa, Japan: Institute for Global Environmental Strategies.
- IPCC (2006) '2006 IPCC guidelines for national greenhouse gas inventories'. In Eggleston, S., Buendia, L., Miwa, K., Ngara, T. and Tanabe, K. (Eds.) Kanagawa, Japan, Institute for Global Environmental Strategies.
- IPCC (2014) '2013 revised supplementary methods and good practice guidance arising from the Kyoto Protocol'. In Hiraishi, T., Krug, T., Tanabe, K., Nalin Srivastava, Jamsranjav, B., Fukuda, M. and Troxler, T. (Eds.) Switzerland, IPCC.
- Jagger, P., Lawlor, K., Brockhaus, M., et al. (2012) REDD+ safeguards in national policy discourse and pilot projects. In Angelsen, A., Brockhaus, M., Sunderlin, W.D. and Verchot, L.V. (Eds.) *Analysing REDD+ Challenges and Choices*. Bogor, CIFOR.
- Jessop, B. (2011) Constituting another Foucault effect: Foucault on states and statecraft. In Bröckling, U., Krasmann, S. and Lemke, T. (Eds.) *Governmentality: Current issues and future challenges*. New York, Routledge 56-73.

- Jørgensen, M.W. and Phillips, L.J. (2002) *Discourse analysis as theory and method*. London: Sage.
- Kissinger, G., Herold, M. and Sy, V.D. (2012) 'Drivers of deforestation and forest degradation. A synthesis report for REDD+ policymakers'. Vancouver, Canada, Lexeme Consulting.
- Klein, N. (2014) *This changes everything: capitalism vs the climate*. London: Allen Lane.
- Köhl, M., Baldauf, T., Plugge, D., et al. (2009) 'Reduced emissions from deforestation and forest degradation (REDD): a climate change mitigation strategy on a critical track', *Carbon Balance and Management*, 4 (doi:10.1186/1750-0680-4-10).
- Kvale, S. (2007) *Doing interviews*. London: Sage.
- Lane, R. (2012) 'The promiscuous history of market efficiency: the development of early emissions trading systems', *Environmental Politics*, 21 (4): 583-603.
- Lang, C. (2014) 'REDD myth no.1: deforestation accounts for 25% of greenhouse gas emissions' [online]. <http://www.redd-monitor.org/2014/02/15/redd-myth-no-1-deforestation-accounts-for-25-of-greenhouse-gas-emissions/> [Accessed 20 February 2014]
- Lansing, D.M. (2012) 'Performing carbon's materiality: the production of carbon offsets and the framing of exchange', *Environment and Planning A*, 44: 204-220.
- Larson, A.M., Brockhaus, M., Sunderlin, W.D., et al. (2013) 'Land tenure and REDD+: the good, the bad and the ugly', *Global Environmental Change*, 23: 678-689.
- Latour, B. (2005) *Reassembling the social: an introduction to actor-network theory*. Oxford: Oxford University Press.
- Laurier, E. and Philo, C. (1999) 'X-morphising: a review essay of Aramis', *Environment and Planning A*, 31: 1047-1073.
- Law, J. (2004) *After method: mess in social science research*. London: Routledge.
- Law, J. (2009) Actor network theory and material semiotics. In Turner, B.S. (Ed.) *The New Blackwell Companion to Social Theory*. Chichester, Wiley-Blackwell.
- Law, J. and Mol, A. (2001) 'Situating technoscience: an inquiry into spatialities', *Society and Space*, 19: 609-621.
- Lederer, M. (2011) 'From CDM to REDD+ — what do we know for setting up effective and legitimate carbon governance?', *Ecological Economics*, 70 (11): 1900-1907.
- Litfin, K. (1994) *Ozone discourses: science and politics in global environmental cooperation*. New York: Columbia University Press.

- Lohmann, L. (2006) 'Carbon trading: a critical conversation on climate change, privatisation and power'. *Development dialogue*. Uddevalla, What next.
- Lövbrand, E. and Strippel, J. (2011a) 'The carbon panopticon: surveillance, sovereignty, subjectivity'. *Governing the global climate polity: Rationality, practice and power*. Lund University.
- Lövbrand, E. and Strippel, J. (2011b) 'Making climate change governable: accounting for carbon as sinks, credits and personal budgets', *Critical Policy Studies*, 5 (2): 187-200.
- Lövbrand, E. and Strippel, J. (2012) 'Disrupting the public-private distinction: excavating the government of carbon markets post-Copenhagen', *Environment and Planning C*, 30 (4): 658-674.
- Lövbrand, E. and Strippel, J. (2014) Bringing governmentality to the study of global climate governance. In Strippel, J. and Bulkeley, H. (Eds.) *Governing the climate: new approaches to rationality, power and politics*. New York, Cambridge University Press 27-41.
- Lövbrand, E., Strippel, J. and Wiman, B. (2009) 'Earth system governmentality: reflections on science in the anthropocene', *Global Environmental Change*, 19 (1): 7-13.
- Lovell, H. (2014a) Measuring forest carbon. In Strippel, J. and Bulkeley, H. (Eds.) *Governing the climate: new approaches to rationality, power and politics*. New York, Cambridge University Press 175-196.
- Lovell, H. (2014b) 'The multiple communities of low-carbon transition: an assessment of communities involved in forest carbon measurement', *Local Environment: The International Journal of Justice and Sustainability*, (doi:10.1080/13549839.2014.905515).
- Lovell, H. and Liverman, D. (2010) 'Understanding carbon offset technologies', *New Political Economy*, 15 (2): 255-273.
- Lovell, H. and MacKenzie, D. (2011) 'Accounting for carbon: the role of accounting professional organisations in governing climate change', *Antipode*, 43: 704-730.
- Lovell, H. and MacKenzie, D. (2014) Allometric equations and timber markets: an important forerunner of REDD+? In Stephan, B. and Lane, R. (Eds.) *The politics of carbon markets*. London/New York, Routledge 69-90.
- Luttrell, C., Loft, L., Gebara, M.F., et al. (2013) 'Who should benefit from REDD+? rationales and realities', *Ecology and Society*, 18 (4): 52.
- Maanen, J.V. (2011) *Tales of the field: on writing ethnography*. Chicago: University of Chicago Press.
- MacKenzie, D. (2009) 'Making things the same: gases, emission rights and the politics of carbon markets', *Accounting, Organizations and Society*, 34: 440-455.

- Mayaux, P., Pekel, J.-F., Desclée, B., et al. (2013) 'State and evolution of the African rainforests between 1990 and 2010', *Philosophical Transactions of the Royal Society B: Biological Sciences*, 368 (20120300).
- McKinsey & Company (2009) *Pathways to a low-carbon economy: version 2 of the global greenhouse gas abatement cost curve*. London: McKinsey & Company.
- Mertz, O. (2009) 'Trends in shifting cultivation and the REDD mechanism', *Current Opinion in Environmental Sustainability*, 1: 156–160.
- Methmann, C. (2014) *We are all green now: hegemony, governmentality and fantasy in the global climate polity*. PhD, Hamburg University.
- Methmann, C. and Stephan, B. (2014) Political sellout! Carbon markets between depoliticising and repoliticising climate politics. In Stephan, B. and Lane, R. (Eds.) *The politics of carbon markets*. London/New York, Routledge 261-279.
- Michaelowa, A. and Rawat, V.R.S. (2007) 'CDM afforestation and reforestation baseline methodologies: an analysis of the submission and approval process'. *HWI Research Programme International Climate Policy*. Hamburg, Hamburg Institute of International Economics.
- Miller, C.A. (2007) 'Democratization, international knowledge institutions, and global governance', *Governance*, 20 (2): 325-357.
- Miller, P. and Rose, N. (1990) 'Governing economic life', *Economy and Society*, 19 (1): 1-30.
- Mokany, K., Raison, J. and Prokushkin, A. (2006) 'Critical analysis of root : shoot ratios in terrestrial biomes', *Global Change Biology*, 12 (1): 84-96.
- Mol, A. (2002a) *The body multiple: ontology in medical practice*. Durham: Duke University Press.
- Mol, A. (2002b) 'Ecological modernization and the global economy', *Global Environmental Politics*, 2 (2): 92-115.
- Mutch, A. (2002) 'Actors and networks or agents and structures: towards a realist view of information systems', *Organization*, 9 (3): 477-496.
- Neumann, I.B. (2008) Discourse analysis. In Klotz, A. and Prakash, D. (Eds.) *Qualitative methods in international relations*. London, New York, Palgrave Macmillan 61-77.
- NGO Interview (2013a) 'NGO Interview 1, 15 February 2013'.
- NGO Interview (2013b) 'NGO Interview 2, 18 February 2013'.
- NGO Interview (2013c) 'NGO Interview 3, 19 February 2013'.
- NGO Interview (2013d) 'NGO Interview 5, 1 March 2013'.

- NGO Interview (2013e) 'NGO Interview 8, 7 March 2013'.
- NGO Interview (2013f) 'NGO Interview 11, 3 April 2013'.
- NGO Interview (2013g) 'NGO Interview 12, 11 April 2013'.
- NGO Interview (2013h) 'NGO Interview 13, 13 June 2013'.
- Nielsen, T.D. (2013) 'The role of discourses in governing forests to combat climate change', *International Environmental Agreements: Politics, Law and Economics*, (doi:10.1007/s10784-013-9223-4).
- Nimmo, R. (2011) 'Actor-network theory and methodology: social research in a more-than-human world', *Methodological Innovations Online*, 6 (3): 108-119.
- Norman, M. and Nakhooda, S. (2014) 'The state of REDD+ finance'. *CGD Working Paper* 378. Washington, DC, Center for Global Development.
- Oels, A. (2005) 'Rendering climate change governable: from biopower to advanced liberal government?', *Journal of Environmental Policy & Planning*, 7 (3): 185-207.
- Okereke, C. and Bulkeley, H. (2007) 'Conceptualizing climate change governance beyond the international regime: a review of four theoretical approaches'. *Tyndall Centre Working Paper*. Tyndall Centre for Climate Change Research.
- Party Interview (2013a) 'Party Interview 1, 31 May 2013'.
- Party Interview (2013b) 'Party Interview 2, 6 June 2013'.
- Party Interview (2013c) 'Party Interview 3, 6 June 2013'.
- Party Interview (2013d) 'Party Interview 5, 10 June 2013'.
- Party Interview (2013e) 'Party Interview 8, 12 November 2013'.
- Party Interview (2013f) 'Party Interview 9, 13 November 2013'.
- Party Interview (2013g) 'Party Interview 10, 15 November 2013'.
- Paterson, M. (1996) *Global warming and global politics*. London: Routledge.
- Paterson, M. and Strippel, J. (2010) 'My space: governing individuals' carbon emissions', *Environment and Planning D*, 28: 341-362.
- Paterson, M. and Strippel, J. (2012) 'Virtuous carbon', *Environmental Politics*, 21 (4): 563-582.
- Pham, T. (2010) 'REDD+ politics in the media: a case study from Vietnam'. Bogor, Center for International Forestry Research

- Phelps, J., Webb, E. and Agrawal, A. (2010) 'Does REDD+ threaten to recentralize forest governance?', *Science*, 328: 312-313.
- Pistorius, T. (2012) 'From RED to REDD+: the evolution of a forest-based mitigation approach for developing countries', *Current Opinion in Environmental Sustainability*, 4 (6): 638-645.
- Pistorius, T., Schmitt, C., Benick, D., et al. (2011) 'Greening REDD+ – challenges and opportunities for integrating biodiversity safeguards at and across policy levels', *German Journal of Forestry Research*, 182 (5/6): 82-98.
- Plugge, D., Baldauf, T. and Köhl, M. (2013) 'The global climate change mitigation strategy REDD: monitoring costs and uncertainties jeopardize economic benefits', *Climate Change*, 119: 247–259.
- Rainforest Foundation UK, Rainforest Foundation Norway, Fern, et al. (2012) 'Views on modalities and procedures for financing results-based actions and considering activities related to decision 1/C.P.16, paragraphs 68, 69, 70 and 72'. Published online at <http://unfccc.int/3689.php>, [Accessed 30 July 2013].
- Rimpiläinen, S. (2012) *Gathering, translating, enacting. A study of interdisciplinary research and development practices in technology enhanced learning*. PhD thesis, University of Stirling.
- Romijn, E., Herold, M., Kooistra, L., et al. (2012) 'Assessing capacities of non-Annex I countries for national forest monitoring in the context of REDD+', *Environmental Science & Policy*, 19-20: 33-48.
- Rose-Redwood, R.S. (2006) 'Governmentality, geography, and the geo-coded world', *Progress in Human Geography*, 30 (4): 469-486.
- Rose, N. (1996) Governing “advanced” liberal democracies. In Barry, A., Osborne, T. and Rose, N. (Eds.) *Foucault and political reason: liberalism, neo-liberalism and rationalities of government*. London, UCL Press.
- Rose, N. (1999) *Powers of freedom: reframing political thought*. Cambridge: Cambridge University Press.
- Rose, N. and Miller, P. (1992) 'Political power beyond the state: problematics of government', *British Journal of Sociology*, 43 (2): 173-205.
- Rowlands, I.H. (1995) *The politics of global atmospheric change*. Manchester: Manchester University Press.
- Rutherford, S. (2007) 'Green governmentality: insights and opportunities in the study of nature's rule', *Progress in Human Geography*, 31 (3): 291-307.
- Salter, M.B. (2013) Research design: introduction. In Salter, M.B. and Mutlu, C.E. (Eds.) *Research methods in critical security studies: an introduction*. Abingdon and New York, Routledge.

- Santilli, M., Moutinho, P., Schwartzman, S., et al. (2003) 'Tropical deforestation and the Kyoto Protocol: a new proposal. Paper presented at UNFCCC, COP9'. Milan, UNFCCC.
- Shackleton, S., Campbell, B., Wollenberg, E., et al. (2002) 'Devolution and community-based natural resource management: creating space for local people to participate and benefit?'. *Natural Resource Perspectives*. London, Overseas Development Institute.
- Somorin, O.A., Brown, H.C.P., Visseren-Hamakers, I.J., et al. (2012) 'The Congo Basin forests in a changing climate: policy discourses on adaptation and mitigation (REDD+)', *Global Environmental Change*, 22: 288-298.
- Stephan, B. (2012) 'Bringing discourse to the market: the commodification of avoided deforestation', *Environmental Politics*, 21 (4): 621-639.
- Stephan, B. (2013) *Not seeing the forest for the carbon in the trees? The role of fighting tropical deforestation in global climate governance*. PhD, University of Hamburg.
- Stephan, B., Rothe, D. and Methmann, C. (2014) Third side of the coin: hegemony and governmentality in global climate politics. In Stripple, J. and Bulekeley, H. (Eds.) *Governing the climate: new approaches to rationality, power and politics*. New York, Cambridge University Press 59-76.
- Stern, N. (2006) *Review on the economics of climate change*. London, UK: H.M. Treasury.
- Stokke, O.S. (1997) Regimes as governance system. In Young, O. (Ed.) *Global governance: drawing insight from the environmental experience*. Cambridge, MIT Press 27-63.
- Stripple, J. and Bulkeley, H. (2014a) *Governing the climate: new approaches to rationality, power and politics* New York: Cambridge University Press.
- Stripple, J. and Bulkeley, H. (2014b) Introduction: on governmentality and climate change. In Stripple, J. and Bulkeley, H. (Eds.) *Governing the climate: new approaches to rationality, power and politics*. New York, Cambridge University Press 1-23.
- Thompson, M., Baruah, M. and Carr, E. (2011) 'Seeing REDD+ as a project of environmental governance', *Environmental Science & Policy*, 14: 100-110.
- TVE/United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (TVE/UN-REDD) (2009) 'REDD as part of the solution'. Published online at <https://www.youtube.com/watch?v=PYHldt9gfMw>, [Accessed 6 August 2015].
- UNFCCC (2003) 'FCCC/CP/2003/6/Add.2 '. Bonn, UNFCCC.
- UNFCCC (2005) 'FCCC/CP/2005/MISC.1'. Bonn, UNFCCC.
- UNFCCC (2006a) 'Background paper for the workshop on reducing emissions from deforestation in developing countries, part 1a'. Bonn, UNFCCC.

UNFCCC (2006b) 'FCCC/KP/CMP/2005/8/Add.3'. Bonn, UNFCCC.

UNFCCC (2006c) 'FCCC/SBSTA/2006/10'. Bonn, UNFCCC.

UNFCCC (2006d) 'FCCC/SBSTA/2006/MISC.5'. Bonn, UNFCCC.

UNFCCC (2006e) 'FCCC/SBSTA/2006/MISC.5/Add.1'. Bonn, UNFCCC.

UNFCCC (2007a) 'FCCC/CP/2007/6/Add.1'. Bonn, UNFCCC.

UNFCCC (2007b) 'FCCC/SBSTA/2007/3'. Bonn, UNFCCC.

UNFCCC (2007c) 'FCCC/SBSTA/2007/MISC.2'. Bonn, UNFCCC.

UNFCCC (2007d) 'FCCC/SBSTA/2007/MISC.2/Add.1'. Bonn, UNFCCC.

UNFCCC (2007e) 'FCCC/SBSTA/2007/MISC.3'. Bonn, UNFCCC.

UNFCCC (2007f) 'FCCC/SBSTA/2007/MISC.14'. Bonn, UNFCCC.

UNFCCC (2007g) 'FCCC/SBSTA/2007/MISC.14/Add.3'. Bonn, UNFCCC.

UNFCCC (2008a) 'FCCC/AWGLCA/2008/16/Rev.1'. Bonn, UNFCCC.

UNFCCC (2008b) 'FCCC/AWGLCA/2008/CRP.5'. Bonn, UNFCCC.

UNFCCC (2008c) 'FCCC/AWGLCA/2008/MISC.5'. Bonn, UNFCCC.

UNFCCC (2008d) 'FCCC/AWGLCA/2008/MISC.5/Add.2 (Part I)'. Bonn, UNFCCC.

UNFCCC (2008e) 'FCCC/SBSTA/2008/11'. Bonn, UNFCCC.

UNFCCC (2008f) 'FCCC/SBSTA/2008/13'. Bonn, UNFCCC.

UNFCCC (2008g) 'FCCC/SBSTA/2008/MISC.4'. Bonn, UNFCCC.

UNFCCC (2009a) 'Cost of implementing methodologies and monitoring systems relating to estimates of emissions from deforestation and forest degradation'. Bonn, UNFCCC.

UNFCCC (2009b) 'FCCC/AWGLCA/2009/MISC.4 (Part I)'. Bonn, UNFCCC.

UNFCCC (2009c) 'FCCC/AWGLCA/2009/MISC.4 (Part II)'. Bonn, UNFCCC.

UNFCCC (2009d) 'FCCC/AWGLCA/2009/MISC.4/Add.2'. Bonn, UNFCCC.

UNFCCC (2009e) 'FCCC/CP/2009/11/Add.1'. Bonn, UNFCCC.

UNFCCC (2009f) 'FCCC/SBSTA/2009/2'. Bonn, UNFCCC.

UNFCCC (2009g) 'FCCC/SBSTA/2009/MISC.1'. Bonn, UNFCCC.

UNFCCC (2009h) 'FCCC/SBSTA/2009/MISC.1/Add.1'. Bonn, UNFCCC.

UNFCCC (2009i) 'FCCC/SBSTA/2009/MISC.1/Add.2'. Bonn, UNFCCC.

UNFCCC (2009j) 'FCCC/SBSTA/2009/MISC.2'. Bonn, UNFCCC.

UNFCCC (2009k) 'FCCC/SBSTA/2009/MISC.2/Add.1'. UNFCCC, Bonn.

UNFCCC (2009l) 'FCCC/SBSTA/2009/MISC.2/Add.2'. Bonn, UNFCCC.

UNFCCC (2009m) 'Non-paper no. 39'. Unpublished, UNFCCC.

UNFCCC (2010a) 'FCCC/AWGLCA/2010/MISC.2'. Bonn, UNFCCC.

UNFCCC (2010b) 'FCCC/CP/2010/7/Add.1'. Bonn, UNFCCC.

UNFCCC (2011a) 'Expert meeting on “forest reference emission levels and forest reference levels for implementation of REDD-plus activities”, Bonn, Germany, 14-15 November, 2011' [online].
http://unfccc.int/land_use_and_climate_change/redd/items/6455.php [Accessed 30 July 2015]

UNFCCC (2011b) 'FCCC/CP/2011/9/Add.2'. Bonn, UNFCCC.

UNFCCC (2011c) 'FCCC/SBSTA/2011/2'. Bonn, UNFCCC.

UNFCCC (2011d) 'FCCC/SBSTA/2011/INF.18'. Bonn, UNFCCC.

UNFCCC (2011e) 'FCCC/SBSTA/2011/MISC.7'. Bonn, UNFCCC.

UNFCCC (2012a) 'FCCC/AWGLCA/2012/MISC.3'. Bonn, UNFCCC.

UNFCCC (2012b) 'FCCC/CP/2012/8/Add.1'. Bonn, UNFCCC.

UNFCCC (2012c) 'FCCC/SBSTA/2012/MISC.1 '. Bonn, UNFCCC.

UNFCCC (2013a) 'Conference of the Parties (COP)' [online].
<http://unfccc.int/bodies/body/6383.php> [Accessed 23 March 2013]

UNFCCC (2013b) 'FCCC/CP/2013/10'. Bonn, UNFCCC.

UNFCCC (2013c) 'FCCC/CP/2013/10/Add.1'. Bonn, UNFCCC.

UNFCCC (2013d) 'Secretariat' [online]. <http://unfccc.int/bodies/body/6441.php> [Accessed 23 March 2013]

UNFCCC (2013e) 'The Secretariat' [online].
http://unfccc.int/secretariat/history_of_the_secretariat/items/1218.php [Accessed 23 March 2013]

- UNFCCC (2013f) 'Subsidiary Body for Scientific and Technological Advice (SBSTA)' [online]. <http://unfccc.int/bodies/body/6399.php> [Accessed 23 March 2013]
- UNFCCC (2014a) 'Coordination of support for the implementation of activities in relation to mitigation actions in the forest sector by developing countries, including institutional arrangements (SBSTA/SBI)' [online]. http://unfccc.int/methods/redd/coordination_of_support/items/7375.php [Accessed 29 August 2014]
- UNFCCC (2014b) 'FCCC/SBSTA/2014/MISC.3'. Bonn, UNFCCC.
- UNFCCC (2014c) 'FCCC/SBSTA/2014/MISC.3/Add.1'. Bonn, UNFCCC.
- UNFCCC (2014d) 'FCCC/SBSTA/2014/MISC.4'. Bonn, UNFCCC.
- UNFCCC (2014e) 'List of Annex I Parties to the Convention' [online]. http://unfccc.int/parties_and_observers/parties/annex_i/items/2774.php [Accessed 23 November 2014]
- UNFCCC (2014f) 'List of non-Annex I Parties to the Convention' [online]. http://unfccc.int/parties_and_observers/parties/non_annex_i/items/2833.php [Accessed 23 November 2014]
- UNFCCC (2014g) 'Parties & observers' [online]. http://unfccc.int/parties_and_observers/items/2704.php [Accessed 29 July 2015]
- UNFCCC (2014h) 'Status of ratification of the Convention' [online]. http://unfccc.int/essential_background/convention/status_of_ratification/items/2631.php [Accessed 29 July 2015]
- UNFCCC (2014i) 'Subsidiary Body for Implementation (SBI)' [online]. <http://unfccc.int/bodies/body/6406.php> [Accessed 29 August 2014]
- UNFCCC (2014j) 'UNFCCC documents in relation to reducing emissions from deforestation and forest degradation in developing countries' [online]. <http://unfccc.int/methods/lulucf/items/6917.php> [Accessed 29 August 2014]
- UNFCCC (2015a) 'FCCC/CP/2015/L.9/Rev.1'. Bonn, UNFCCC.
- UNFCCC (2015b) 'FCCC/SBSTA/2015/L.5/Add.2'. Bonn, UNFCCC.
- UNFCCC (2015c) 'FCCC/SBSTA/2015/L.5/Add.3'. Bonn, UNFCCC.
- UNFCCC (2015d) 'Negotiating text. Advance unedited version, 12 February 2015'. Unpublished, UNFCCC.
- United Nations (1992) 'United Nations Framework Convention on Climate Change'. United Nations.

- United Nations (2010) 'Report of the Secretary-General's high-level advisory group on climate change financing'. New York, United Nations.
- United Nations (2015) 'Press release: Secretary-General, at Washington meeting, calls for ambitious global climate finance framework to spur cleaner, more sustainable growth' [online]. <http://www.un.org/press/en/2015/sgsm16676.doc.htm> [Accessed 6 May 2015]
- United Nations Environment Programme - Technical University of Denmark (UNEP-DTU) (2014) 'CDM projects by type' [online]. <http://www.cdmpipeline.org/cdm-projects-type.htm> [Accessed 23 November 2014]
- United Nations Environment Programme & Technical University of Denmark, U.-D. (2015) 'CDM projects by host region' [online]. <http://www.cdmpipeline.org/cdm-projects-region.htm> [Accessed 2015-05-06]
- van der Werf, G.R., Morton, D.C., DeFries, R.S., et al. (2009) 'CO₂ emissions from forest loss', *Nature Geoscience*, 2: 737 - 738.
- Vatn, A. (2010) 'An institutional analysis of payments for environmental services', *Ecological Economics*, 39: 1245-1252.
- Verchot, L.V., Anitha, K., Romijn, E., et al. (2012) Emissions factors. In Angelsen, A., Brockhaus, M., Sunderlin, W.D. and Verchot, L.V. (Eds.) *Analysing REDD+ challenges and choices*. Bogor, CIFOR.
- Watson, C. (2009) 'Forest carbon accounting: overview & principles'. Published online: http://www.bw.undp.org/content/undp/en/home/librarypage/environment-energy/climate_change/mitigation/forest-carbon-accounting-overview---principles.html, [Accessed 6 May 2015].
- Webber, J. (2011) *From rebellion to reform in Bolivia: class struggle, indigenous liberation, and the politics of Evo Morales*. Chicago: Haymarket Books.
- Wetlands International (2011) 'Submission on behalf of Wetlands International to the subsidiary body for scientific and technological advice (SBSTA)'. Published online at <http://unfccc.int/3689.php>, [Accessed 6 May 2015].
- Whittle, A. and Spicer, A. (2008) 'Is actor network theory critique?', *Organization Studies*, 29 (4): 611-629.
- Wilkinson, C. (2013) Not just finding what you (thought you) were looking for: field data and theory. In Yanow, D. and Schwartz-Shea, P. (Eds.) *Interpretation and Method*. 2 ed. New York, M E Sharpe.
- Williams, D. (2006) 'Ownership', sovereignty and global governance'. *The Global Economic Governance Programme*. Oxford, University College.

Williams, M. (2005) Knowledge and global environmental policy. In Dauvergne, P. (Ed.) *Handbook of global environmental politics*. Cheltenham, UK, Edward Elgar Publishing Ltd 402-416.

Woods Hole Research Center (WHRC) and Amazon Institute for Environmental Research (IPAM) (2007) 'Submission to the UNFCCC/SBSTA: reducing emissions from deforestation in developing countries'. Published online at <http://unfccc.int/3689.php>, [Accessed 26 February 2014].

World Commission on Environment and Development (WCED) (1987) *Our common future*. Oxford: Oxford University Press.

World Wide Fund for Nature (WWF), Union of Concerned Scientists (UCS) and Yale School of Forestry & Environmental Studies (2014) 'Mapping UNFCCC REDD+: a visual guide to the systems and structures supporting REDD+ within the UNFCCC'. Gland, Switzerland, The World Wide Fund for Nature.

Zürn, M. (1998) 'The rise of international environmental politics: a review of current research', *World Politics*, 50 (4): 617-649.